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SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1984

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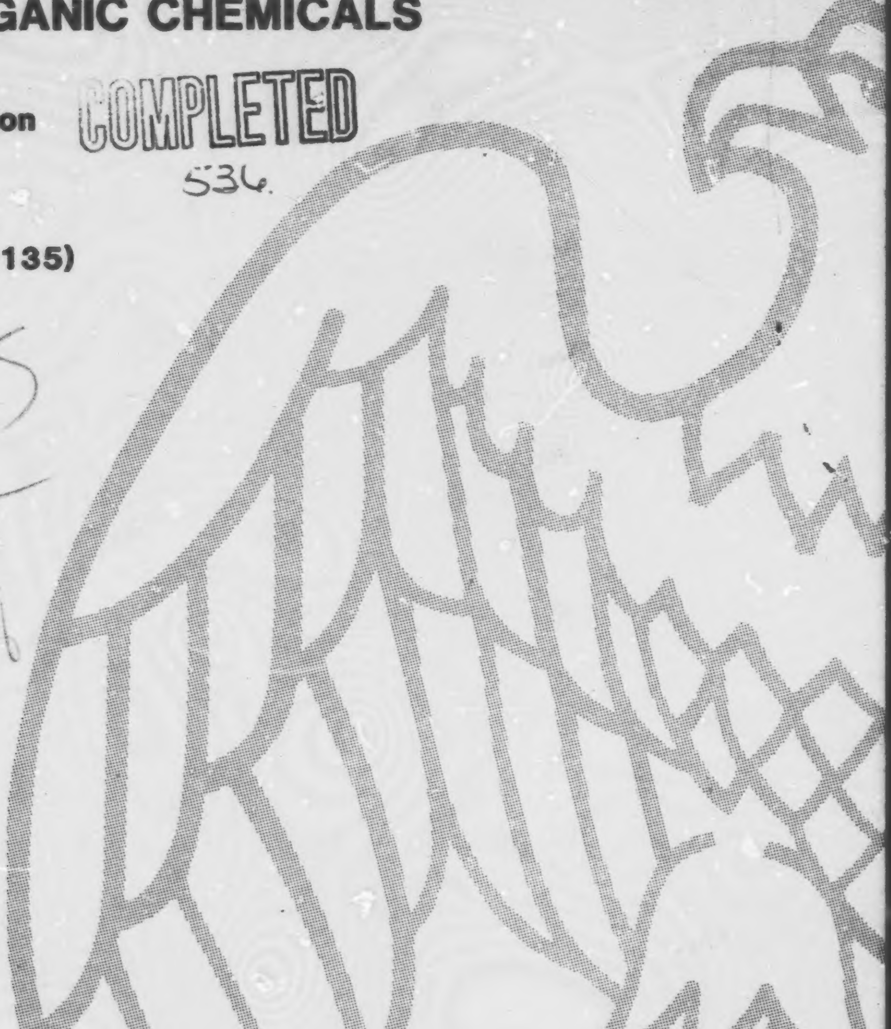

USITC PUBLICATION 1745

United States International Trade Commission / Washington, D.C. 20436

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UNITED STATES INTERNATIONAL TRADE COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production
And Sales, 1984

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1985

USITC PUBLICATION 1745

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INTRODUCTION

This is the 68th annual report of the U.S. International Trade Commission on domestic production and sales of synthetic organic chemicals and the raw materials from which they are made. The report consists of 15 sections, each covering a specified group (based principally on use) of organic chemicals as follows: Tar and tar crudes; primary products from petroleum and natural gas for chemical conversion; cyclic intermediates; dyes; organic pigments; medicinal chemicals; flavor and perfume materials; plastics and resin materials; rubber-processing chemicals; elastomers; plasticizers; surface-active agents; pesticides and related products; miscellaneous end-use chemicals and chemical products; and miscellaneous cyclic and acyclic chemicals. Data have been supplied by approximately 762 producers.

Each of the 15 sections is headed by a summary of the statistical data. The first table in each section gives statistics on products and groups of products in as great detail as is possible without revealing the operations of individual producers. Statistics for an individual chemical or group of chemicals are given only when there are three or more producers, no one or two of which may be predominant. Moreover, even when there are three or more producers, statistics are not given if there is any possibility that their publication would violate the statutory provisions relating to unlawful disclosure of information accepted in confidence by the Commission.

Data are reported by producers for only those items where the volume of production or sales or value of sales exceeds certain minimums. Those minimums for all sections are 5,000 pounds of production or sales or $5,000 of value of sales with the following exceptions: Plastics and resin materials--50,000 pounds or $50,000; pigments, medicinal chemicals, flavor and perfume materials, and rubber-processing chemicals--1,000 pounds or $1,000. They are usually given in terms of undiluted materials; however, products of 95 percent or greater purity are considered to be 100 percent pure. Commercial concentrations are applicable for dyes, certain plastics and resins, and a few solvents; such concentrations are specifically noted.

The statistics given in this report include data from all known domestic producers of the items covered and include the total output of each company's plants, i.e., the quantities produced for consumption within the producing plant, as well as the quantities produced for domestic and foreign sale. The quantities reported as produced, therefore, generally exceed the quantities reported as sold. Some of these differences, however, are attributable to changes in inventory.

The second table in each section lists all items for which data on production or sales have been reported, by primary manufacturers, identified by manufacturers' codes. Each code consists of not more than three capital letters and is assigned on a permanent basis.

The third table in each section is a directory, alphabetized by the codes of the manufacturers reporting in that section.

Table 1 of the Appendix is a directory, alphabetized by the names of the manufacturers reporting in all sections and which includes their general corporate phone numbers and office addresses.

Table 2 of the Appendix lists synonymous names for cyclic intermediates. Information on synonymous names of the organic chemicals included in this report may be found in the *SOCMA Handbook: Commercial Organic Chemical Names*, published by the Chemical Abstracts Service of the American Chemical Society, or the *Colour Index* (Revised Third Edition), published jointly by the Society of Dyes and Colourists and the American Association of Textile Chemists and Colorists.

Data contained in this report are compiled primarily from Commission's questionnaires sent to domestic producers and represent the best data available to the Commission. While the data supplied in the questionnaires are checked against data previously supplied by the submitting firm and with data supplied by other domestic producers, data are not independently verified by direct Commission examination of the books of companies furnishing information. Data contained in this report should not be used for investment and other purposes without independent verification.

As specified in the reporting instructions sent to manufacturers, production and sales (unless otherwise specified) are defined as follows:

> *PRODUCTION is the total quantity of a commodity made available by ORIGINAL MANUFACTURERS ONLY within the customs territory of the United States (includes the 50 States, the District of Columbia, and Puerto Rico). It covers synthetic organic chemicals, specified crudes from petroleum and coal tar, and certain chemically described natural products, such as, alkaloids, enzymes, and perfume isolates. It is the sum--expressed in terms of 100% active ingredient unless otherwise specified in the reporting instructions--of the quantities:*
>
> *Produced, separated, and consumed in the same plant or establishment. A commodity is considered separated either when it is isolated from the reactive system or when it is not isolated, but weighed, analyzed, or otherwise measured. This includes byproducts and co-products that are not classifiable as waste materials;*

---

18 U.S.C. § 1905 and 44 U.S.C. § 3508.

Produced and not isolated, but directly converted to a finished or semifinished item not included in this report (e.g., polyester film, polyurethane tires, nylon fiber, bar soap, etc.). (See specific instructions in individual sections);

Produced and transferred to other plants or establishments of the same firm or 100% owned subsidiaries or affiliates;

Produced and sold to, or bartered with, other firms (including less than 100% owned subsidiaries);

Produced for others under toll agreements (see general instructions);

Produced and held in stock.

PRODUCTION EXCLUDES:

Purification of a commodity, which is purchased by, or transferred from within, the company, unless inclusion of such processing is specifically requested in the reporting instructions for individual sections;

Intermediate products which are formed in the manufacturing process, but are not isolated from the reaction system--that is, not weighed, analysed, or otherwise measured; except such products as described above as being produced and not isolated, but directly converted to a finished or semifinished item.

Materials that are used in the process but which are recovered for re-use or sale;

Waste products having no economic significance.

SALES are actual quantities of commodities sold by ORIGINAL MANUFACTURERS ONLY. Sales include the quantity and value of:

Shipments of a commodity for domestic use or for export, or segregation in a warehouse when title has passed to the purchaser in a bona fide sale;

Shipments of a commodity produced for you by others under toll agreement;

Shipments to subsidiary or affiliated companies, provided the ownership is less than 100%.

SALES EXCLUDES:

All intra-company transfers within a corporate entity;

All shipments to 100% owned subsidiary or affiliated companies;

All resales of imported or purchased material, including materials obtained by barter;

All shipments of commodity produced for others under toll agreements.

VALUE OF SALES is the net dollar receipts of sales f.o.b. plant or warehouse, or delivered. F.o.b. values are preferred, but if they are not readily available from your records, delivered values are acceptable.

Combined production of all synthetic organic chemicals, tar, and primary products from petroleum and natural gas in 1984 was 338,025 million pounds--an increase of 3.0 percent from the output in 1983 (table 1). Sales of these materials in 1984, which totaled 179,061 million pounds, valued at $65,535 million, were 3.4 percent larger than in 1983 in terms of quantity and 9.5 percent larger in terms of value. These figures include data on production and sales of chemicals measured at several successive steps in the manufacturing process, and, therefore, they necessarily reflect some duplication.

In 1984, production of all synthetic organic chemicals, including cyclic intermediates and finished products totaled 225,215 million pounds, or 4.8 percent more than the output in 1983. Eleven sections showed an increase in production in 1984 over 1983. Medicinal chemicals (279 million pounds) increased by 19.5 percent; pesticides and related products (1,189 million pounds) increased by 17.0 percent; elastomers (synthetic rubber) (4,609 million pounds) increased by 14.9 percent; miscellaneous end-use chemicals and chemical products (23,731 million pounds) increased by 12.2 percent; organic pigments (86 million pounds) increased by 9.8 percent; plastics and resins materials (48,255 million pounds) increased by 9.0 percent; surface-active agents (5,519 pounds million increased by 8.9 percent; cyclic intermediates (47,052 million pounds) increased by 8.6 percent; plasticizers (1,788 million pounds) increased by 4.5 percent; flavor and perfume materials (179 million pounds) increased by 2.7 percent; of the remaining sections, dyes (233 million pounds) showed a decrease in 1984 of 4.8 percent from that in 1983; rubber-processing chemicals (288 million pounds) decreased 1.7 percent, and miscellaneous cyclic and acyclic chemicals (92,009 million pounds) decreased 1.4 percent.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS AND THEIR RAW MATERIALS: U.S. PRODUCTION AND SALES, 1983 AND 1984

CHEMICAL	PRODUCTION			SALES					
				QUANTITY			VALUE		
	1983	1984	Increase or Decrease (-), 1984 over 1983[1]	1983	1984	Increase or Decrease (-), 1984 over 1983[1]	1983	1984	Increase or Decrease (-), 1984 over 1983[1]
	Million pounds	*Million pounds*	*Percent*	*Million pounds*	*Million pounds*	*Percent*	*Million dollars*	*Million dollars*	*Percent*
Grand total[2]	328,202	338,025	3.0	173,171	179,061	3.4	59,860	65,535	9.5
Tar	3,603	4,144	15.0	1,884	2,223	18.0	270	311	15.2
Primary products from petroleum and natural gas	109,670	108,666	-0.9	53,480	51,178	-4.3	8,257	8,256	-0.1
Synthetic organic chemicals, total[2]	214,928	225,215	4.8	117,807	125,659	6.7	51,333	56,968	11.0
Cyclic intermediates	43,320	47,052	8.6	18,802	19,957	6.1	6,599	6,930	5.0
Dyes	244	233	-4.8	234	221	-5.7	728	691	-5.1
Organic pigments	78	86	9.8	69	76	9.8	422	493	16.7
Medicinal chemicals	233	279	19.5	148	152	3.0	1,410	1,369	-2.9
Flavor and perfume materials	174	179	2.7	111	115	3.2	345	637	84.7
Plastics and resin materials	44,281	48,255	9.0	38,075	40,751	7.0	18,371	20,923	13.9
Rubber-processing chemicals	293	288	-1.7	203	176	-13.4	312	287	-8.3
Elastomer (synthetic rubber)	4,013	4,609	14.9	2,688	2,686	-0.1	2,196	2,266	3.2
Plasticizers	1,710	1,788	4.5	1,597	1,685	5.6	775	849	9.5
Surface-active agents	5,068	5,519	8.9	3,030	3,433	13.3	1,464	1,874	28.0
Pesticides and related product	1,017	1,189	17.0	1,017	1,108	8.9	4,054	4,730	16.7
Miscellaneous end-use chemicals and chemical products	21,149	23,731	12.2	12,703	14,931	17.5	3,330	3,834	15.1
Miscellaneous cyclic and acyclic chemicals	93,348	92,009	-1.4	39,128	40,386	3.2	11,326	12,043	6.3

[1] Percentage calculated from figures rounded to thousands.

[2] Because of rounding, figures may not add to the totals shown.

GENERAL

In this report, synthetic organic chemicals are classified on the basis of their principal use as follows: Cyclic intermediates, dyes, organic pigments, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers (synthetic rubber), plasticizers, surface-active agents, pesticides and related products, miscellaneous end-use chemicals and chemical products, and miscellaneous cyclic and acyclic chemicals. Most of these groups are further subdivided either by use or by chemical composition. As intermediates, chemicals are used in the manufacture of finished products, aggregate figures that cover both intermediates and finished products necessarily include considerable duplication.

Total production of synthetic organic chemicals (intermediates and finished products combined) in 1984 was 225,215 million pounds, or 4.8 percent more than the output of 214,928 million pounds reported for 1983, and 115.1 percent more than the output of 104,711 million pounds reported in 1967 (see table 2). Sales of synthetic organic chemicals in 1984 amounted to 125,659 million pounds, valued at $56,968 million, compared with 117,807 million pounds, valued at $51,333 million, in 1983, and 55,177 million pounds, valued at $10,438 million, in 1967. Production of all cyclic products (intermediates and finished products combined) in 1984 totaled 72,927 million pounds, or 8.3 percent more than the 67,362 million pounds reported for 1983, and 133.9 percent more than the 31,182 million pounds reported for 1967; however, the transfer of eight items, in 1979 from the primary products from petroleum and natural gas section to the section on cyclic intermediates has caused the output of cyclic products to appear much higher in relation to 1967 than would otherwise have resulted. Production of all acyclic products in 1984 totaled 147,678 million pounds, or 2.9 percent more than the 143,553 million pounds reported for 1983, and 111.9 percent more than the 69,707 million pounds reported for 1967.

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1983, AND 1984

(Production and sales in thousands of pounds; sales value in thousands of dollars)

CHEMICAL	1967[1]	1983	1984	Increase or Decrease (-) 1984 OVER 1967	Increase or Decrease (-) 1984 OVER 1983
Organic chemicals, cyclic and acyclic, grand total:					
Production	104,711,357	214,928,145	225,214,940	115.1	4.8
Sales	55,176,823	117,806,657	125,676,661	127.8	6.7
Sales value	10,438,453	51,333,184	56,925,687	445.4	10.9
Cyclic, total:[2]					
Production	31,181,832	67,362,356	72,927,149	133.9	8.3
Sales	17,388,529	36,439,627	38,791,816	123.1	6.5
Sales value	4,170,713	22,929,674	25,608,446	514.0	11.7
Acyclic, total:[2]					
Production	69,706,980	143,552,759	147,678,486	111.9	2.9
Sales	34,526,250	78,678,615	84,199,037	143.9	7.0
Sales value	5,393,503	26,207,931	29,050,916	438.6	10.8
1. Cyclic Intermediates					
Production	20,793,132	43,320,256	47,051,869	126.3	8.6
Sales	9,461,180	18,802,500	19,956,652	110.9	6.1
Sales value	1,000,359	6,599,222	6,930,243	592.8	5.0
2. Dyes					
Production	206,240	244,206	232,615	12.8	-4.8
Sales	198,592	233,780	220,520	11.0	-5.7
Sales value	332,049	728,138	690,808	108.0	-5.1
3. Organic Pigments					
Production	53,322	77,980	85,664	60.6	9.8
Sales	42,867	69,334	76,154	77.6	9.8
Sales value	108,354	422,434	492,954	355.0	16.7
4. Medicinal Chemicals					
Cyclic:					
Production	110,129	174,918	223,730	103.2	27.9
Sales	70,120	97,601	108,357	54.5	11.0
Sales value	348,873	1,282,049	1,240,696	255.6	-3.2
Acyclic:					
Production	69,941	58,191	54,910	-21.5	-5.6
Sales	56,804	50,339	44,091	-22.4	-12.4
Sales value	36,402	128,019	128,739	253.7	0.6

See footnotes at end of table.

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1983, and 1984--CONTINUED

(Production and sales in thousands of pounds; sales value in thousands of dollars)

CHEMICALS	1967 [1]	1983	1984	Increase or Decrease (-)	
				1984 OVER 1967	1984 OVER 1983
5. Flavors and Perfume Materials					
Cyclic:					
Production	57,978	90,693	113,913	96.5	25.6
Sales	47,285	67,115	83,287	76.1	24.1
Sales value	52,866	281,169	581,613	1000.2	106.9
Acyclic:					
Production	53,558	83,301	64,806	21.0	-22.2
Sales	49,311	44,051	31,422	-36.3	-28.7
Sales value	40,495	63,589	55,189	36.3	-13.2
6. Plastics and Resin Materials					
Cyclic:					
Production	5,033,497	13,151,401	14,331,668	184.7	9.0
Sales	4,224,121	11,117,910	11,899,168	181.7	7.0
Sales value	1,036,940	7,458,587	8,494,591	719.2	13.9
Acyclic:					
Production	8,759,452	31,129,411	33,923,108	287.3	9.0
Sales	7,753,242	26,957,125	28,851,408	272.1	7.0
Sales value	1,635,690	10,912,316	12,428,047	659.8	13.9
7. Rubber-Processing Chemicals					
Cyclic:					
Production	220,139	246,050	259,777	18.0	5.6
Sales	169,970	162,528	153,960	-9.4	-5.3
Sales value	116,318	279,164	260,701	124.1	-6.6
Acyclic:					
Production	43,994	46,470	27,802	-36.8	-40.2
Sales	30,878	40,495	21,949	-28.9	-45.8
Sales value	15,477	33,143	25,808	66.8	-22.1
8. Elastomers (Synthetic Rubber)					
Production	3,822,545	4,013,030	4,609,305	20.6	14.9
Sales	3,262,044	2,688,415	2,685,808	-17.7	-0.1
Sales value	874,237	2,195,579	2,266,325	159.2	3.2
9. Plasticizers					
Cyclic:					
Production	929,871	1,280,190	1,338,362	43.9	4.5
Sales	865,084	1,231,593	1,307,210	51.1	6.1
Sales value	167,827	518,289	577,694	244.2	11.5
Acyclic:					
Production	332,908	429,893	449,166	34.9	4.5
Sales	296,767	365,018	377,997	27.4	3.6
Sales value	93,142	257,068	271,083	191.0	5.4
10. Surface-Active Agents					
Cyclic:					
Production	1,418,444	2,198,746	2,409,849	(4)	9.6
Sales	852,238	1,672,720	1,843,375	(4)	10.2
Sales value	95,810	557,046	790,721	(4)	42.0
Acyclic:					
Production	2,060,851	2,869,646	3,109,332	(4)	8.4
Sales	897,786	1,357,452	1,589,835	(4)	17.1
Sales value	220,877	907,265	1,083,626	(4)	19.4

See footnotes at end of table.

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TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1983, AND 1984--CONTINUED

(Production and sales in thousands of pounds; sales value in thousand of dollars)

CHEMICAL	1967[1]	1983	1984	Increase or Decrease (-) 1984 OVER 1967	Increase or Decrease (-) 1984 OVER 1983
11. Pesticides and Related Products					
Cyclic:					
Production	823,158	710,922	842,703	2.4	18.5
Sales	681,532	727,864	809,033	18.7	11.2
Sales value	627,742	3,047,703	3,556,700	466.6	16.7
Acyclic:					
Production	226,505	305,622	346,466	53.0	13.4
Sales	215,831	289,097	298,873	38.5	3.4
Sale value	159,301	1,006,225	1,173,611	636.7	16.6
12. Miscellaneous End-Use Chemicals and Chemical Product					
Cyclic:					
Production	(1,535,922)	3,342,791	3,484,611	([5])	4.2
Sales	(775,540)	880,419	1,089,144	([5])	23.7
Sales value	(283,575)	700,102	901,196	([5])	28.7
Acyclic:					
Production	(58,159,771)	17,806,511	20,246,332	([5])	13.7
Sales	(25,225,631)	11,822,941	13,842,307	([5])	17.1
Sales value	(3,192,119)	2,629,693	2,932,471	([5])	11.5
13. Miscellaneous Cyclic and Acyclic Chemicals					
Cyclic:					
Production	([5])	2,524,203	2,552,388	([5])	1.1
Sales	([5])	1,376,263	1,244,956	([5])	-9.5
Sales value	([5])	1,055,771	1,090,529	([5])	3.3
Acyclic:					
Production	([5])	90,823,714	89,456,564	([5])	-1.5
Sales	([5])	37,752,097	39,141,155	([5])	3.7
Sales value	([5])	10,270,613	10,952,342	([5])	6.6

[1] Standard reference base period for Federal Government general-purpose index numbers.

[2] Does not include data for elastomers.

[3] Includes ligninsulfonates.

[4] The data for 1967 are not comparable with current data as a result of a change in accounting procedures.

[5] Items in these two sections were previously included in the section named miscellaneous chemicals.

The following tabulation shows, by chemical groups, the number of companies that reported production in 1984 of one or more of the chemicals included in the groups listed in table 2:

Chemical Group	*Number of Companies*	*Chemical Group*	*Number of Companies*
Cyclic intermediates	181	Elastomers (synthetic rubber)	26
Dyes	34	Plasticizers	47
Organic pigments	31	Surface-active agents	172
Medicinal chemicals	92	Pesticides and related products	82
Flavor and perfume materials	37	Miscellaneous end-use chemicals and chemicals products	169
Plastics and resins materials	275	Miscellaneous cyclic and acyclic chemicals	279
Rubber-processing chemicals	22		

STATISTICAL HIGHLIGHTS

Cynthia B. Foreso
202-523-1230

TAR

Coal tar is produced chiefly by the steel industry as a by-product of the manufacture of coke; water-gas tar and oil-gas tar are produced by the fuel-gas industry. Production of coal tar, therefore, depends on the demand for steel; production of water-gas tar and oil-gas tar reflects the consumption of manufactured gas for industrial and household use. Water-gas and oil-gas tars have properties intermediate between those of petroleum asphalts and coal tar. Petroleum asphalts are not usually considered to be raw materials for chemicals.

The quantity of coal tar produced in the United States in 1984 amounted to 343 million gallons (table 1). Production in 1984 was 21 percent more than the 284 million gallons of coal tar produced in 1983. Sales of coal tar in 1984 amounted to 275 million gallons, compared with 234 million gallons in 1983. U.S. production of water-gas and oil-gas tars was not reported to the Commission for 1983 and 1984; production of these tars in 1968 amounted to 21 million gallons, according to trade publications.

TAR CRUDES

Tar crudes are obtained from coke-oven gas and by distilling coal tar, water-gas tar, and oil-gas tar. The most important tar crudes are benzene, toluene, xylene, creosote oil, and pitch of tar. Some of these products are identical with those obtained from petroleum. Data for materials obtained from petroleum are included, for the most part, with the statistics for like materials obtained from coke-oven gas and tars, and are shown in tables 1

The domestic production by coke-oven operators of industrial and specification grades of benzene, toluene, and xylene cannot be published since to do so would disclose the operations of individual companies. However, the 1984 benzene production by petroleum refiners amounted to 1.3 billion gallons. The output of toluene from petroleum refiners (including material used for blending in aviation fuel) totaled 728 million gallons in 1984; and the refiners' output of xylene (including that produced for blending in motor fuels) totaled 854 million gallons.

Production figures for road tar for 1984 cannot be published; however, production of tar for use other than as a road tar was 151 million gallons in 1984.

Some of the products obtained from tar and included in the statistics in table 1 are obtained from other products for which data are also included in the table. The statistics, therefore, involve considerable duplication, and for this reason no group totals or grand totals are given.

Data for 1984 tar crudes were supplied by 27 companies and company divisions.

TABLE 1.--TAR AND TAR CRUDES; U.S. PRODUCTION AND SALES, 1984

[Listed below are all tar crudes for which any reported data on production or sales may be published. Table 2 lists all products for which data on production and/or sales were reported and identifies the manufacturers of each]

TAR AND TAR CRUDES	UNIT OF QUANTITY	PRODUCTION	SALES		
			QUANTITY	VALUE	UNIT VALUE[1]
				1,000 dollars	
Coal tar:[2] Coke-oven operators	1,000 gal	342,451	274,538	200,413	$0.73
Crude light oil:[3] Coke-oven operators	1,000 gal	98,975	84,222	64,009	.76
Intermediate light oil: Coke-oven operators	1,000 gal	2,841	441	260	.59
Light-oil distillates:					
Benzene, all grades, total[4]	1,000 gal	(5)	(5)	(5)	(5)
Coke-oven operators	1,000 gal	(5)	(5)	(5)	(5)
Petroleum refiners[6]	1,000 gal	1,317,782	644,913	874,067	1.36
Toluene, all grades, total	1,000 gal	(5)	(5)	(5)	(5)
Coke-oven operator	1,000 gal	(5)	(5)	(5)	(5)
Petroleum refiners[7]	1,000 gal	728,060	568,880	629,601	1.11
Xylene, all grades, total[4]	1,000 gal	(5)	(5)	(5)	(5)
Coke-oven operators	1,000 gal	(5)	(5)	(5)	(5)
Petroleum refiners	1,000 gal	854,005	377,447	418,851	1.11
Naphthalene, crude	1,000 lbs	(5)	(5)	(5)	(5)
Creosote oil (Dead oil) (100% creosote basis):					
Distillate as such (100% creosote basis)	1,000 gal	42,175	30,352	26,651	.88
Creosote in coal tar solution (100% solution basis)	1,000 gal	40,785	30,921	26,448	.86
Tar, for uses other than road tar	1,000 gal	150,641	175,046	135,452	.77
Pitch of tar: hard	1,000 tons	787	664	176,025	265.10

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[1] Unit value per gallon pound, or ton as specified.

[2] Data reported to the Energy Information Administration, U.S. Department of Energy (Quarterly Coal Report, January-March 1985). Data on U.S. production of water-gas tar and oil-gas tar are not collected by the U.S. International Trade Commission, but, according to trade publications, production of these tars amounted to 21 million gallons in 1968.

[3] Data reported by tar distillers are not included because publication would disclose the operations of individual companies.

[4] Includes data for material produced for use in blending motor fuels. The annual production statistics for petroleum refiners on benzene, toluene, and xylene are not comparable with the combined monthly production figures because of fiscal year revisions.

[5] Statistics cannot be published; to do so would disclose the operations of individual companies.

[6] Benzene, specification grades (1°,2°).

[7] Sales data for Toluene produced by petroleum refiners includes only high purity (98-100%) toluene.

Note 1.--Statistics for materials produced in coke and gas-retort ovens are compiled by the Energy Information Administration, U.S. Department of Energy. Statistics for materials produced in tar and petroleum refineries are compiled by the U.S. International Trade Commission.

Note 2.--Data for all other tars and tar crudes are not included in the 1984 report because publication would disclose the operations of individual companies.

TABLE 2.--TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

TAR AND TAR CRUDES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
LIGHT OIL, LIGHT OIL DISTILLATES, AND TAR BASES:	
CRUDE LIGHT OIL:	
*Crude light oil	ABP, ALS, BTS, CHA, EKO, IGC, ILI, INL, LTV, NTS, SGO, USS, X.
*Intermediate light oil: coke-oven operators	EKO, X.
PYRIDINE, TAR BASES:	
BENZENE (BENZOL):	
Tar bases: crude bases (Dry basis)	INL, NTS.
Benzene (Benzol) 90-100%	BTS, USS.
TOLUENE (TOLUOL):	
Tar bases: semirefined or denaturing grade	USS.
Toluene (Toluol) 90-100%	BTS, USS, X.
XYLENE (XYLOL):	
Xylene (Xylol): 90-100%	USS.
SOLVENT NAPHTHA:	
Solvent naphtha	IGC, USS.
ALL OTHER:	
Light-oil distillates, all other	BTS, LTV, USS.
OTHER TAR DISTILLATES:	
NAPHTHALENE, CRUDE:	
Methylnaphthalene	KPT.
Naphthalene, crude, solidifying at less than 74° C	BTS, IGC, LTV.
Naphthalene, crude, solidifying at 74° C to less than 76° C	LTV.
Naphthalene, crude, solidifying at 76° C to less than 79° C	ACS, KPT, USS.
CRUDE TAR ACID OILS:	
Crude tar acid oils having a tar acid content of: all other	BTS.
Crude tar acid oils having a tar acid content of: 5 percent to less than 24 percent	ACS, X.
CREOSOTE OIL (DEAD OIL):	
Creosote oil (Dead oil): creosote content in solution (100 Percent basis)	KPT, RIL.
*Creosote oil (Dead oil): creosote in coal tar solution (100 Percent solution basis)	ACS, KPT, RIL, USS, WTC.
*Creosote oil (Dead oil): distillate as such (100 Percent creosote basis)	ACS, COP, KPT, RIL, USS, WTC.

TABLE 2.--TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

TAR AND TAR CRUDES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
OTHER TAR DISTILLATES--CONTINUED	
ALL OTHER DISTILLATE PRODUCTS:	
Carbon Black oil	ACS, KPT.
Creosote tar acid oil	ACS, KPT.
Crude coal tar solvent	ILI.
Priming and refractory oil	BTS, KPT.
Sodium phenate or carbolate	NTS.
Tetralin, crude (Tetrahydronaphthalene)	KPT.
Tar distillates, all other	GIV, KPT.
TAR AND TAR PITCHES:	
TAR, ROAD:	
Tar, road	ACS, RIL.
TAR FOR OTHER USES:	
*Tar for other uses: crude	ABP, ALS, BTS, HUS, IGC, LTV, SGO, USS.
*Tar for other uses: refined	ACS, RIL, X, X.
PITCH OF TAR:	
Pitch of tar: hard (M.P. 161° F and Over)	ACS, KPT, RIL, USS, WTC.
Pitch of tar: medium (M.P. 110° To 160° F)	ACS, COP, KPT, RIL, USS.
Pitch of tar: soft (M.P. 80° To 109° F)	KPT, USS.

TABLE 3.--TAR AND TAR CRUDES: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of tar and tar crudes to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ABP	Alabama By-Products Corp.	KPT	Koppers Co., Inc.
ACS	Allied Corp., Chemical Sector		
ALS	Armco, Inc.	LTV	LTV Steel Company, Inc.
BTS	Bethlehem Steel Corp.	NEV	Neville Chemical Co.
		NTS	National Steel Corp., Great Lakes Plant
CHA	Chattanooga Coke & Chemical Co., Inc.	RIL	Reilly Tar & Chemical Corp.
COP	Coopers Creek Chemical Corp.	RSC	Rupublic Steel Corp.
EKO	Empire Coke Co.	SGO	Shenango, Inc.
GIV	Givaudan Corp.	USS	U.S. Steel Corp.:
			Clairton Plant
HUS	Husky Industries, Inc.		Gary Works
			Geneva Plant
IGC	Indiana Gas & Chemical Corp.		USS Chemicals Div.
ILI	Interlake, Inc.		
INL	Inland Steel Co.	WTC	Witco Chemical Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SECTION II -- PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

STATISTICAL HIGHLIGHTS

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Primary products that are derived from petroleum and natural gas are related to the intermediates and finished products made from such primary materials in much the same way that crude products derived from the distillation of coal tar are related to their intermediates and finished products. Many of the primary products derived from petroleum are identical with those derived from coal tar (e.g., benzene, toluene, and xylene). Considerable duplication exists in the statistics on the production and sales of primary petroleum products because some of these primary chemicals are converted to other primary products derived from petroleum and because data on some production and sales are reported at successive stages in the conversion process. The statistics are sufficiently accurate, however, to indicate trends in the industry. Many of the primary products for which data are included in the statistics may be used either as fuel or as basic materials from which other chemicals are derived. In this report every effort has been made to exclude data on materials that are used as fuel; however, data are included on toluene and xylene, which are used in blending aviation and motor fuel.

The output of primary products derived from petroleum and natural gas as a group amounted to 108,666 million pounds in 1984. Production in 1983 was 109,670 million pounds. The output of aromatic and naphthenic products from petroleum amounted to 24,563 million pounds in 1984, compared with 23,727 million pounds in 1983. Sales amounted to $2,162 million in 1984 and $2,284 million in 1983. In 1984, production of benzene was 9,646 million pounds; production of toluene was 5,249 million pounds; and production of mixed xylenes were 6,490 million pounds (table 1).

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 84,103 million pounds in 1984, compared with 85,944 million pounds in 1983. Sales of these products were valued at $6,094 million in 1984, compared with $5,974 million in 1983. Production of ethylene was 31,383 million pounds in 1984. The output of 1,3-butadiene in 1984 was 2,827 million pounds. Production of propylene in 1984 was 15,559 million pounds (table 1).

Data for 1984 primary products from petroleum and natural gas for chemical conversion were supplied by 72 companies or company divisions.

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[1] Statistics on chemicals from coal tar are given in Section 1 (Tar and Tar Crudes) of this report.

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TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION: U.S. PRODUCTION AND SALES, 1984

[Listed below are the primary products from petroleum and natural gas for chemical conversion for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all primary products from petroleum and natural gas for chemical conversion for which data on production and/or sales were reported and identifies the manufacturers of each]

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	108,666,227	51,178,238	8,256,420	$0.16
AROMATICS AND NAPHTHENES[2]				
Total	24,562,959	13,708,786	2,162,370	.16
Benzene, all grades, total	9,646,164	...	...	...
High purity (98-100%)	8,529,544	4,059,257	750,859	.18
Other (90-97.9%)	1,116,620	...	...	...
Toluene, all grades, total	5,249,313	4,101,625	629,601	.15
High purity (98-100%)	4,462,546	4,038,457	620,872	.15
Other (90-97.9%)[3,4]	786,767	63,168	8,729	.14
Xylene, mixed, total	6,490,435	2,868,595	418,851	.15
High purity (98-100%)	4,516,631	2,235,328	327,484	.15
Other (90-97.9%)[4]	1,973,804	633,267	91,367	.14
All other aromatics and naphthenes[5]	3,177,047	2,679,309	363,059	.14
ALIPHATIC HYDROCARBONS				
Total	84,103,268	37,469,452	6,094,050	.16
C_2 Hydrocarbons, total	36,880,952	12,111,802	1,970,786	.16
Acetylene[6] (For chemical use only)	276,816	101,449	44,509	.44
Ethane	5,221,136	2,099,205	168,383	.08
Ethylene	31,383,000	9,911,148	1,757,894	.18
C_3 Hydrocarbons, total	23,111,716	13,263,599	1,863,736	.14
Propane	7,552,264	6,828,577	734,008	.11
Propylene[7]	15,559,452	6,435,022	1,129,728	.18
C_4 Hydrocarbons, total	11,874,647	5,675,976	1,224,018	.22
Butadiene and butylene fractions	971,313	804,056	135,752	.17
1,3-Butadiene, grade for rubber (elastomers)	2,826,627	2,417,194	711,193	.29
n-Butane	2,380,370	1,082,057	124,042	.11
1-Butene	1,205,208	239,360	60,568	.25
1-Butene and 2-Butene mixed[8]	1,039,861	223,246	33,776	.15
Isobutane	1,057,277	359,230	49,127	.14
Isobutylene	883,093	382,405	84,090	.22
All other[9]	1,510,898	168,428	25,470	.15
C_5 Hydrocarbons, total	2,083,309	496,986	85,053	.17
Isoprene (2-Methyl-1,3-butadiene)	99,695	102,466	24,662	.24
n-Pentane	107,668	...	....	...
Pentenes, mixed	697,131	97,354	10,179	.10
All other[10,11]	1,178,815	297,166	50,212	.17
All other aliphatic hydrocarbons, derivatives and mixtures, total	10,152,644	5,921,089	950,457	.16
Alpha olefins, C_5-C_{10}	625,914	273,403	82,479	.30

See footnotes at end of table.

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION: U.S. PRODUCTION AND SALES, 1984 --CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
ALIPHATIC HYDROCARBONS--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
All other aliphatic hydrocarbons, derivatives and mixtures--Continued				
Alpha olefins, C_{11} and higher	...	398,800	122,913	$0.31
Dodecene (Tetrapropylene)	388,379	120,363	24,368	.20
n-Heptane	114,677	119,318	26,553	.22
Hexane	469,511	306,924	62,700	.20
Nonene (Tripropylene)	457,212	253,852	60,123	.24
n-Paraffins[12]	1,723,697	1,239,833	227,613	.18
Polybutene	240,855	191,665	57,653	.30
All other[13]	6,132,399	3,016,931	286,055	.09

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[1] Calculated from rounded figures.

[2] The chemical raw materials designated as aromatics are in some cases identical with those obtained from the distillation of coal tar; however, the statistics given in the table above relate only to such materials as are derived from petroleum and natural gas. Statistics on production and/or sales of benzene, toluene, and xylene from all sources are given in table 1 of the report on "Tar and Tar Crudes."

[3] Includes toluene, solvent grade, 90 percent.

[4] Includes toluene and xylene used as solvents; may include that which is blended in aviation and motor gasolines.

[5] Includes data for alkyl aromatics, crude cresylic acid, cyclopentane, naphthalene, naphthenic acid, carbon black feedstock, distillates, solvents and miscellaneous cyclic hydrocarbons. Includes sales data only for benzene (other grades).

[6] Production figures on acetylene from calcium carbide for chemical synthesis are collected by the U.S. Bureau of the Census.

[7] Includes data for refinery propylene.

[8] The statistics represent principally the butane content of crude refinery gases from which butadiene is manufactured.

[9] Includes data for mixed C_4 streams, mixed butanes, and 2-butene.

[10] Includes data for dibutanized aromatic concentrate, mixtures of C_5 hydrocarbons, isopentane, 1-pentene, 2-pentene, and piperylene.

[11] Includes sales data only for n-pentane.

[12] Includes data for the following chain lengths: C_5-C_9, C_9-C_{15}; C_{10}-C_{14}: and others.

[13] Includes production and/or sales data for methane, methylcyclopentadiene, isoheptene, iso octane, mixed hexenes, mixed heptenes, mixed octenes, n-octane, di-isobutylene, eicosane, mixtures of C_2 and C_3, C_5-C_7, C_5-C_7 hydrocarbons, C_{11} and higher alpha olefins, hydrocarbon derivatives, and other hydrocarbons.

TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3.

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AROMATICS AND NAPHTHENES	
ALKYL AROMATICS:	
Cyclosols	CXI, SHC.
*BENZENE:	
*Benzene, High purity (98-100%)	AMO, APR, ASH, ATR, CCP, CGO, CRP, CSD, DOW, EKX, ENJ, GOC, GRS, HES, MOC, PLC, PPR, QH(E), SHC, SKO, SM, SOC, SOG, SUN, SWR, TID, TOC, TX, UCC, UOC, USI, VEL.
*Benzene, Other	AMO, CSP, DUP, KHI, KLM.
Cresylic acid (Less than 75 percent distilling over 215° C)	FER, KHI.
Cyclopentane	PLC.
Naphthalene	DUP, TID.
NAPHTHENIC ACID:	
Naphthenic acid, acid number 150-199	CPS, HEC, MER.
Naphthenic acid, acid number 200-224	FER, MER.
Naphthenic acid, acid number less than 150	ATR, FER, HEC, SHC, SUN.
*TOLUENE:	
*Toluene, High purity (98-100%)	APR, ASH, ATR, CCP, CSD, EKX, ENJ, GRS, HES, HST, KHI, MOC, MON, PLC, PPR, QH(E), SHC, SM, SOG, SUN, SWR, TID, TOC, UCC, UOC.
*Toluene, Other	CSP, DOW, DUP, ELP, GOC, PPR, SHC, SKO.
*XYLENES, MIXED:	
*Xylene, High purity (98-100%)	AMO, APR, ASH, CCP, CSD, EKX, ENJ, HES, MOC, PPR, QH(E), SHC, SOG, SUN, SWR, UCC, UOC.
*Xylene, Other	AMO, CSP, DUP, GOC, PLC, SOC, TOC.
*ALL OTHER AROMATICS AND NAPHTHENES:	
Aromatics, C_9	KHI, MOC.
Carbon black feedstock	ENJ.
All other products from petroleum and natural gas, cyclic	AMO, ASH, BAS, BFG, EKX, ENJ, KHI, SHC, SWR, VST.
ALIPHATIC HYDROCARBONS	
C_1 HYDROCARBONS:	
Methane	NWP, SHC, SHO.

TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--CONTINUED	
*C_2 HYDROCARBONS:	
*Acetylene (For chemical use only)	BAS, BOR, RH, UCC.
*Ethane	ACU, AMO, CGO, ENJ, OMC, PLC, SHO, USI.
*Ethylene	ACU, AMO, ATR, BAS, BFG, CPX(E), CRP, DOW, DUP, EKX, ELP, ENJ, GOC, MCB, MWP, OMC, PLC, SHC, SM, SMO, TX, UCC, USI, USS, VST.
C_3 HYDROCARBONS:	
Hydrocarbons, C_2-C_3, mixtures	TU.
Hydrocarbons, C_3, mixtures	KHI.
*Propane (Commercial and hd-5)	AMO, ASH, CCP, CGO, CSD, CSP, ENJ, EPC, GRS, KHI, MOC, OMC, PLC, SHO, SM, SOG, SUN, TCR, TUS, UOC, USI.
*Propylene	ACU, AMO, ASH, ATR, BAS, BFG, CCP, CGO, CLK, CPX(E), CRP, CSD, DOW, DUP, EKX, ELP, ENJ, EPC, GOC, MCB, MOC, MWP, PLC, SHC, SIO, SKO, SM, SOC, SOG, SUN, TCR, TX, UCC, USS, VST.
*C_4 HYDROCARBONS:	
*Butadiene and butylene fractions	ACU, BAS, CRP, EKX, ELP, ENJ, GOC, MWP, PLC, TUS, UCC.
*1,3-Butadiene, grade for rubber (Elastomers)	AMO, ATR, CRP, DOW, DUP, ELP, ENJ, PTT, SHC, SM, TPC, TUS, VST.
*n-Butane	AMO, ASH, CSD, CSP, ENJ, EPC, GOC, KHI, OMC, PLC, SHO, SUN, TUS, USI.
Butanes, mixed	SM.
*1-Butene	ENJ, GOC, PTT, SHC, TMA, TPC.
2-Butene	PLC, TPC.
*1-Butene and 2-butene, mixed	ATR, DOW, ENJ, SHC, SM, SOG, TMA.
Hydrocarbons, C_4, fraction	KHI, TX, USS.
Hydrocarbons, C_4, mixtures	MCB, PPR.
*Isobutane (2-Methylpropane)	AMO, CSP, ENJ, EPC, GOC, KHI, OMC, PLC, SHO, SUN, TUS, USI.
*Isobutylene (2-Methylpropene)	AMO, ATR, ENJ, GOC, PTT, SHC, TPC, TUS.
Hydrocarbons, C_4, all other	ENJ, SHO, USI.
*C_5 HYDROCARBONS:	
Dibutanized aromatic concentrate	ELP.
Isopentane (2-Methylbutane)	PLC.
*Isoprene (2-Methyl-1,3-butadiene)	ATR, DOW, ENJ, GOC.
*n-Pentane	APR, ASH, GOC, PLC, SHO.
I-Pentene	PLC, SOC.
2-Pentene	BFG.
*Pentenes, mixed	DOW, ENJ, PLC, SHC, SHO, TUS, USS.

TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--CONTINUED	
C_5 HYDROCARBONS--Continued	
Piperylene (1,3-Pentadiene)	CKI, DOW.
Hydrocarbons, C_5, all other	ATR, ENJ, EHI, TX, UCC.
*ALL OTHER ALIPHATIC HYDROCARBONS, DERIVATIVES, AND MIXTURES:	
C_6 HYDROCARBONS:	
Di-isopropane (2,3-Dimethylbutane)	PLC.
*Hexane	APR, ASH, CKI, ENJ, HMY, PLC, SHO, SOG, UOC.
Hexenes, mixed	ENJ.
Hydrocarbons, C_5-C_6, mixtures	PLC.
Hydrocarbons, C_5-C_7, mixtures	ENJ, GOC.
Isohexane	PLC.
Methylcyclopentadiene	ENJ.
Neohexane (2,2-Dimethylbutane)	PLC.
Hydrocarbons, C_6, all other	SM.
C_7 HYDROCARBONS:	
*n-Heptane	ENJ, PLC, SOG, UOC.
Heptenes, mixed	ENJ, TID.
Hydrocarbons, C_6-C_7, mixtures	PPR.
Isoheptanes	PLC.
Hydrocarbons, C_7, all other	EKX.
C_8 HYDROCARBONS:	
Di-isobutylene (Di-isobutene)	EKT, PTT, TPC.
n-Octane	SOG.
Octenes, mixed	ENJ, TID.
2,2,4-Trimethylpentane (Iso-octane)	PLC.
Hydrocarbons, C_8, all other	SHC.
C_9 AND ABOVE HYDROCARBONS (EXCEPT ALPHA OLEFINS):	
*Dodecene	ATR, ENJ, SOC, SUN, UOC.
Eicosane	HMY.
*Nonene (Tripropylene)	ATR, CSP, ENJ, TID, UOC.
ALPHA OLEFINS:	
*Alpha olefins, C_6-C_{16}	GOC, SHC, SOC, TMA, USI.
*Alpha olefins, C_{18} and higher	FER, GOC, SHC, SOC, TMA.
*N-PARAFFINS - CARBON CHAIN LENGTH:	
n-Paraffins, C_6-C_9	SOG, UCC, UOC.
n-Paraffins, C_9-C_{15}	SOG, UOC.
n-Paraffins, C_{10}-C_{14}	ENJ, FER, SHC, SOG, UOC.
n-Paraffins, C_{10}-C_{16}	VST.
n-Paraffins, C_{12}-C_{18}	VST.
n-Paraffins, other	ENJ, SOG, UOC.

TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--CONTINUED	
ALL OTHER ALIPHATIC HYDROCARBONS, DERIVATIVES, AND MIXTURES, TOTAL--Continued	
Hydrocarbons, C_5-C_9, mixtures	CRP.
*Polybutene	AMO, CSD, SOC.
HYDROCARBON DERIVATIVES:	
n-Butyl mercaptan (1-Butanethiol)	PAS, PLC.
sec-Butyl mercaptan (2-Butanethiol)	HAP, PLC.
tert-Butyl mercaptan (2-Methyl-2-propanethiol)	HAP, PAS, PLC.
Di-tert-butyl disulfide	PLC.
Diethyl sulfide (Ethyl sulfide)	HAP, PAS.
Dimethyl sulfide	PAS.
Ethyl mercaptan (Ethanethiol)	HAP, PAS, PLC.
Ethylthioethanol	HAP, PLC.
Isopropyl mercaptan (2-Propanethiol)	HAP, PAS, PLC.
Methyl ethyl sulfide	HAP.
Methyl mercaptan (Methanethiol)	PAS.
Octyl mercaptans	PAS.
n-Propyl mercaptan (1-Propanethiol)	PAS, PLC.
Thiophane (Tetrahydrothiophene)	HAP.
Hydrocarbon derivatives: all other hydrocarbon derivatives	PAS, PLC, TX.
Hydrocarbons, C_9 and above, all other, including mixtures	CSP, GOC, NES, PLC, SHC, SOC, TMA.

TABLE 3.--PRIMARY PRODUCTS FROM PETROLEUM AND NATRUAL GAS FOR CHEMICAL CONVERSION: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of crude products from petroleum and natural gas for chemical conversion to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

Code	Name of Company	Code	Name of Company
ACU	Allied Corp., Union Texas Petroleum Corp.	MER	Merichem Co.
AMO	Standard Oil Co. (Indiana)	MOC	Marathon Petroleum Co., Texas Refining Div.
APR	Atlas Processing Co.	MON	Monsanto Co.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.		
ATR	Atlantic Richfield Co., Arco Chemical Co.	NES	Ruetger-Nease Chemical Co.
		NWP	Northern Petrochemical Co.
BAS	BASF Wyandotte Corp.		
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical	OMC	Olin Corp.
	Group		
BOR	Borden, Inc., Borden Chemical Div.	PAS	Pennwalt Corp.
		PLC	Phillips Petroleum Co.
CCP	Crown Central Petroleum Corp.	PPR	Phillips Puerto Rico Core, Inc.
CGO	Citgo Petroleum Corp.	PTT	Petro-Tex Chemical Corp.
CLK	Clark Oil & Refining Corp.		
CPS	CPS Chemical Co., Inc.	QH	Quintana Petrochemical Co.
CPX	Chemplex Co.		
CRP	Corpus Christi Petrochemical Co.	RH	Rohm & Haas Co.
CSD	Cosden Oil & Chemical Corp.		
CSP	Coastal Corp., Coastal States Petroleum Co.	SHC	Shell Oil Co., Shell Chemical Co. Div.
CXI	Chemical Exchange Industries, Inc.	SHO	Shell Oil Co.
		SIO	Standard Oil Co. (Ohio)
DOW	Dow Chemical Co.	SKO	Texaco Refining & Marketing, Inc.
DUP	E. I. duPont de Nemours & Co., Inc.	SM	Mobil Oil Corp.:
			Gas Liquids Dept.
	Eastman Kodak Co.:		Mobil Chemical Co., Petrochemicals Div.
EKT	Tennessee Eastman Co. Div.	SNO	SunOlin Chemical Co.
EKX	Texas Eastman Co. Div.	SOC	Chevron Corp., Chevron Chemical Co.
ELP	El Paso Products Co.	SOG	Charter International Oil Co.
ENJ	Exxon Chemical Americas	SUN	Sun Company, Inc.
EPC	Enterprise Products Co. of Mississippi	SWR	Southwestern Refining Co., Inc.
FER	Ferro Corp., Productol Chemical Div.	TCR	Texas City Refining, Inc.
		TID	Texaco Refining & Marketing, Inc., Delaware Refinery
GOC	Gulf Oil Corp., Gulf Oil Products	TNA	Ethyl Corp.
GRS	Champlin Petroleum Co.	TOC	Tenneco Oil Co.
		TPC	Texas Petrochemicals Corp.
HAP	Helmerich & Payne, Inc., National Gas	TU	Tenn-USS Chemicals Co.
	Odorizing Div.	TUS	Texaco Butadiene Co.
HEC	Hewchem	TX	Texaco, Inc., Texaco Chemical Co.
HES	Amerada Hess Corp. (Hess Oil Virgin Islands		
	Corp.)	UCC	Union Carbide Corp.
HMY	Humphrey Chemical Co.	UOC	Union Oil Co. of California
HST	American Hoeshst Corp., Petrochemical/	USI	National Distillers & Chemicals Corp., U.S.
	Plastics Group		Industrial Chemicals Co.
		USS	U.S. Steel Corp., USS Chemicals Div.
KHI	Koch Refining Co.		
KLM	Kalama Chemical, Inc.	VEL	Velsicol Chemical Corp.
		VST	Vista Chemical Co.
MCB	Borg-Warner Corp., Borg-Warner Chemicals		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

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STATISTICAL HIGHLIGHTS

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202-523-0492

Cyclic intermediates are synthetic organic chemicals derived principally from petroleum and natural gas and from coal-tar crudes produced by destructive distillation (pyrolysis) of coal. Most cyclic intermediates are used in the manufacture of more advanced synthetic organic chemicals and finished products, such as dyes, medicinal chemicals, elastomers (synthetic rubber), pesticides, and plastics and resin materials. Some intermediates, however, are sold as end products without further processing. For example, refined naphthalene may be used as a raw material in the manufacture of 2-naphthol or of other more advanced intermediates, or may be packaged and sold as a moth repellant or as a deodorant. In 1984, about 42 percent of the total output of cyclic intermediates was sold; the rest was consumed chiefly in the producing plants in the manufacture of more advanced intermediates and finished products.

Total production of cyclic intermediates in 1984 amounted to 47,052 million pounds, an increase of 9 percent from the 43,320 million pounds produced in 1983. Sales of cyclic intermediates in 1984 were 19,957 million pounds, valued at $6,930 million, compared with 18,803 million pounds, valued at $6,599 million, in 1983.

Intermediates that were produced in excess of 2 billion pounds in 1984 were ethylbenzene (7,562 million pounds), styrene (7,709 million pounds), dimethyl terephthalate (5,912 million pounds), p-xylene (4,264 million pounds), cumene (3,754 million pounds), and phenol (2,889 million pounds). Other large volume intermediates produced in 1984 were cyclohexane (1,994 million pounds), isocyanates (1,417 million pounds), nitrobenzene (983 million pounds), phthalic anhydride (870 million pounds), cyclohexanone (796 million pounds), aniline (786 million pounds), bisphenol A (762 million pounds), o-xylene (688 million pounds), alkylbenznes (561 million pounds), monochlorobenzene (256 million pounds), toluene-2,4-diamine (187 million pounds), nonylphenol (162 million pounds), and tetrahydrofuran (125 million pounds). The chemicals mentioned above accounted for 89 percent of the total output of cyclic intermediate production in 1984.

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TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1984

[Listed below are all cyclic intermediates for which any reported data on production and sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published. or where no data were reported.) Table 2 lists all cyclic intermediates for which data on production and/or sales were reported and identifies the manufacturer of each].

CYCLIC INTERMEDIATES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	47,051,869	19,956,652	6,930,243	$0.35
Acetoacetanilide	12,966	10,972	11,839	1.08
Alkylbenzenes[2]	560,782	516,618	208,202	.40
4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5-Methyl-o-anisidinesulfonic acid)	1,484	198	813	4.11
Aniline (Aniline oil)	786,037	435,594	128,273	.29
2-Benzothiazolethiol, sodium salt	21,073	3,128	2,293	.73
Biphenyl	35,208	9,904	3,838	.39
2-Bromo-4,6-dinitroaniline	874	580	962	1.66
Butylphenols, mixed	15,831	7,749	5,289	.68
Chlorobenzene, mono-	256,127	121,417	31,928	.26
Cresols and cresylic acid, total[3]	117,506	79,435	51,473	.65
o-Cresol	40,708	43,561	25,169	.58
All other[4]	76,798	35,874	26,304	.73
Cumene	3,754,181	2,146,505	472,404	.22
Cyclohexane	1,993,937	1,502,313	383,004	.25
Cyclohexanone	795,700	54,678	24,827	.45
o-Dichlorobenzene	52,236	47,991	17,340	.36
p-Dichlorobenzene	73,498	73,298	29,468	.40
Dicyclopentadiene (including cyclopentadiene)	101,046	95,793	22,748	.24
p-Dodecylphenol	24,123	...	...	...
Ethylbenzene	7,562,076	273,684	56,429	.21
2-(N-Ethyl-N, β-cyanoethyl)-4-acetaminoanisole	29,210	...	...	...
Isocyanic acid derivatives, total	1,416,607	1,494,885	859,725	.58
Diphenylmethane-4,4'-diisocyanate (MDI)	105,107	382,943	81,163	.21
Polymethylene polyphenylisocyanate	629,105	478,922	312,995	.65
Toluene-2,4- and 2,6-diisocyanate (80/20 mixture)	663,277	617,059	445,070	.72
Other isocyanic acid derivatives	19,118	15,961	20,497	1.28
4,4'-Isopropylidenediphenol (Bisphenol A)	762,135	318,309	153,450	.48
o-Nitroaniline	11,903	...	...	...
Nitrobenzene	982,744	28,146	6,753	.24
Nonylphenol	161,611	65,486	26,429	.40
Phenol, total[3]	2,889,142	1,185,577	357,569	.30
From cumene	2,728,214	1,031,663	310,635	.30
All other	160,928	153,914	46,934	.30
Phthalic anhydride	870,245	532,151	142,385	.27
Salicylic acid, tech	44,180	3,815	3,729	.98
Styrene	7,709,229	3,114,648	857,470	.28
Terephthalic acid, dimethyl ester[5]	5,911,800	...	...	...

See footnotes on last page.

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1984--CONTINUED

CYCLIC INTERMEDIATES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*Per pound*
Tetrahydrofuran	124,868	48,540	45,224	$0.93
Toluene-2,4-diamine (4-m-Tolyenediamine)	186,748	...	...	...
p-Toluenesulfonic acid	10,707	10,390	3,743	.36
o-Xylene	688,051	504,553	87,747	.17
p-Xylene	4,264,065	2,608,489	629,072	.24
All other cyclic intermediates	4,823,939	4,661,806	2,305,817	.50

[1] Calculated from unrounded figures.

[2] Includes straight-chain dodecylbenzene, tridecylbenzene, and other straight-chain alkylbenzenes. Branched-chain alkylbenzenes are included in "All other cyclic intermediates."

[3] Does not include data for coke oven and gas-retort ovens, reported to the Office of Energy Data and Interpretation, Energy Information Administration, Department of Energy.

[4] Figures include (o,m,p)-cresol from coal tar, m-cresol, p-cresol, cresylic acid refined from petroleum and coal tar, and (m,p)-cresol from petroleum.

[5] The figure for terephthalic acid, dimethyl ester (DMT) includes both the acid itself and the dimethyl ester without double counting. The acid production figure was multiplied by the factor 1.16 to convert it to equivalent DMT.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3-Acetamido-N-(2-succinimidoethyl)-N-ethylaniline	EKT.
Acetanilide, tech.	SAL.
p-Acetanisidide	SDC.
Acetic acid, phenyl ester	BKM.
*Acetoacetanilide	BRD, EKT, HST.
o-Acetoacetanisidide	BRD, EKT, HST.
o-Acetoacetotoluidide	BRD, EKT, HST.
p-Acetoacetotoluidide	HST.
2',4'-Acetoacetoxylidide	EKT, HST.
Acetoacet-m-xylidide	BRD.
1'-Acetonaphthone	GIV.
Acetophenone, tech.	SKO.
p-Acetotoluidide	EK.
-Acetylamino-p-toluenesulfonamine	SDW.
p-Acetylbenzenesulfonamide	LIL.
p-Acetylbenzenesulfonic acid, sodium salt	LIL.
2-Acetylpyridine	RIL.
Aldadiene	SRL.
*ALKYLBENZENES:	
Alkylbenzene straight-chain (Except dodecyl and tridecyl)	MON, WTC.
DODECYLBENZENE (INCLUDING TRIDECYLBENZENE):	
Dodecylbenzene, straight-chain	MON, VST, WTC.
Dodecylbenzene, other	SOC, VST, WTC.
Alkylphenols, mixed	FER, SW, VTC.
Alkylpyridines, mixed	RIL, X.
3'-Aminoacetanilide	CGY.
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	CGY, HST.
3'-Amino-p-acetanisidide	HST, SDC.
5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CGY.
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	CGY.
3-Amino-p-anisanilide	PCW.
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)	CGY.
p-Aminobenzamide	NSC.
3'-Aminobenzanilide	HST.
o-Aminobenzenethiol	FMT.
p-Aminobenzoic acid, tech.	NSC, WYK.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Amino-6-benzothiazolesulfonic acid	VPC.
1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt	VPC.
1-Amino-2-bromo-4-hydroxyanthraquinone	VPC.
1-Amino-2-bromo-4-p-toluidinoanthraquinone	BRS.
2-Amino-5-chloro-2-fluorobenzophenone	DOW.
2-Amino-5-chloro-p-toluenesulfonic acid [$SO_3H=1$]	BAS.
6-Amino-5-chloro-m-toluenesulfonic acid [$SO_3H=1$] (2B Acid)	BAS, CYH, DUP.
4-Amino-N,N-di(β-hydroxyethyl)aniline sulfate	WAY.
5-Amino-2,3-dimethylbenzenesulfethanolamide	CGY.
3-Amino-9-ethylcarbazole	SDC.
N-Aminohexamethyleneimine	X.
4-Amino-3-hydroxy-1-naphthalenesulfonic acid	CGY.
2-(2-Amino-5-hydroxy-7-sulfo-1-naphthylazo)-5-nitrobenzoic acid	CGY.
3-Amino-2-mercaptobenzoic acid	SDW.
3-Amino-4-methoxyacetanilide	CGY.
*4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5-methyl-o-anisidinesulfonic acid)	SW, VPC, X.
m-[(4-Amino-3-methoxyphenyl)azo]benzenesulfonic acid	CGY, VPC.
3-Amino-4-methylbenzamide	HST.
2-Amino-4'-methyldiphenylsulfone-4-sulfonic acid	CGY.
4-Aminomethylpiperidine	RIL.
2-Amino-2-methylpropyl 8-bromotheophyllinate	CHT.
2-Amino-4-methylpyridine	RIL.
2-Amino-5-methylpyridine	NEP, RIL.
2-Amino-6-methylpyridine	RIL.
2-Amino-4-(methylsulfonyl)phenol	CGY.
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	CGY.
2-Amino-1,5-naphthalenedisulfonic acid, sodium salt	X.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)	AMB.
2-Amino-1-naphthalenesulfonic acid (Tobias acid)	LAK.
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	CGY.
5(and 8)-Amino-2-naphthol	BUC.
8-Amino-2-naphthol	BUC, CGY.
2-(4-Amino-2-nitroanilino)ethanol	SOL.
2-Amino-6-nitrobenzothiazole	VPC.
2-Amino-4-nitrophenol	SOL, VPC.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	ATL, CGY.
2-Amino-5-nitrothiazole	PCW.
2-Amino-4-nitrotoluene hydrochloride	PCW.
6-Aminopenicillanic acid	BRS, PFZ.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-Aminophenol	MAL, SCN.
p-[(p-Aminophenyl)azo]benzenesulfonic acid	CGY, VPC.
2-(4-Aminophenylazo)-4-methylphenol	VPC.
7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid	CGY, ACY.
5-[(p-Aminophenyl)azo]salicylic acid	CGY.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt	CGY.
3-Aminophenylphosphonic acid	ICI.
p-Aminopropionanilide	CGY.
2-Aminopyridine	RIL.
3-Aminopyridine	RIL.
4-Aminopyridine	RIL.
2-Aminothiazole nitrate	PCW.
4-Amino-m-toluenesulfonic acid [SO_3H=1]	DUP.
6-Amino-m-toluenesulfonic acid [SO_3H=1]	CYH, DUP.
m-[(4-Amino-3-tolyl)azo]benzenesulfonic acid	CGY.
7-[(4-Amino-o-tolyl)azo]-1,3-naphthalenedisulfonic acid	CGY.
*Aniline (Aniline oil)	DUP, FST, ICI, MAL, RUC, USR, USS, VPC.
2-Anilinoethanol	EKT, TCH.
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid	CGY.
Anilinomethanesulfonic acid and salt	ATL, CGY, VPC.
8-Anilino-1-naphthalenesulfonic acid (Phenyl Peri acid)	WTC.
o-Anisidinomethanesulfonic acid	ATL, CGY, VPC.
Anisole, tech.	CHF.
Anisoyl chloride	SD.
Anthral, [1,9]pyrazol-6(2H)-one (Pyrazoleanthrone)	CGY, SW.
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	CGY.
Benzaldehyde, tech.	KLM.
Benzamidine hydrochloride	EK.
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid	CGY.
7H-Benz[de]anthracen-7-one (Benzanthrone)	CGY.
Benzenesulfonic acid, sodium salt	EK.
Benzenesulfonic acid	UPF.
Benzenesulfonyl chloride	SFS, UPF.
1,2,4-Benzenetricarboxylic acid, 1,2-dianhydride (Trimellitic anhydride)	AMO.
Benzhydrol (Diphenylmethanol)	PD.
Benzil	LEM.
Benzimidazole	EK.
Benzoic acid, methyl ester	HCF.
Benzoic acid, tech.	KLM, PFZ, VEL.
Benzoin	SFS.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Benzoin isobutyl ether	SFS.
Benzonitrile	SFS.
Benzophenone	UPJ.
Benzophenone hydrazone	OMC.
*2-Benzothiazolethiol, sodium salt	BFG, BKM, GYR, USR.
1H-Benzotriazole	SW.
2-Benzoxazolethiol	EK.
Benzoyl chloride	HK, KLM, VEL.
2-Benzoyl pyridine	GHW.
N-Benzylacetamide	SDW.
Benzylamine	HXL, KLM.
2-(Benzylamino)ethanol	HXL.
1-Benzyl-3,4-dimethyl-2-(p-methoxylbenzyl)-1,2,5,6-tetrahydropyridine oxalate	SD.
Benzyl ether (Dibenzyl ether)	OPC.
3-(Benzylethylamino)acetanilide	EKT.
2-Benzyl-2'-hydroxy-5,9-dimethyl-6,7-benzomorphanhydrobromide	SD.
p-(Benzyloxy)phenol	FKE.
1-Benzyl-4-phenylisonipecotic acid, ethyl ester	SDW.
1-Benzyl-4-phenylisonipecotonitrile	SDW.
4-Benzylpiperidine	RIL.
Benzyltriethylammonium chloride	HXL.
Benzyltrimethylammonium hydroxide	HXL.
[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'(2H,2'H)-dione (Pyazoleanthrone Yellow)	CGY.
*Biphenyl	DOW, GOC, KHI, MON, TCC.
N,N-Bis-(2-acetoxyethyl)-aniline	VPC.
Bis(p-aminocyclohexyl)methane	DUP.
1,4-Bis[1-anthraquinonylamino]anthraquinone	CGY.
1,5-Bis[1-anthraquinonylamino]anthraquinone	CGY.
1,4-Bis[1-anthraquinonylamino]anthraquinone and 1,4-bis[5-Chloro-1-anthraquinonylamino]anthraquinone (Mixed)	CGY.
2,6-Bis(p-azidobenzylidene)-4-methylcyclohexanone	X.
Bis(chlorosulfonyl)phthalocyaninedisulfonic acid, copper derivative	CGY.
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	X.
Bis(β-dimethylaminoethyl)phenylacetonitrile	WYT.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	VPC.
3'-[Bis(2-hydroxyethyl)amino]benzanilide, diacetate ester	TCH.
1,2-Bis(tribromophenoxy)ethane	GTL.
p-Bromoaniline	EK.
Bromobenzaldehyde	TMA.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Bromobenzene,mono	DAZ, GTL.
o-Bromobenzoic acid	PD.
1-Bromo-4-Chlorobenzene	DAZ.
4-Bromo-3,5-dihydroxybenzamide	PCW.
4-Bromo-3,5-dihydroxybenzoic acid	PCW.
*2-Bromo-4,6-dinitroaniline	CGY, HST, SDC.
2-(2-Bromo-4,6-dinitrophenylazo)-5-diethylaminoacetanilide	CGY.
1-Bromo-4-ethoxy-2-methylbenzene	X.
-Bromo-p-nitrotoluene (p-Nitrobenzyl bromide)	SDW.
Bromopheniramine base	HKX.
2-Bromopyridine	DAZ, OMC.
3-Bromopyridine	RIL.
5-Bromopyrimidine	SFS.
p-Butoxyphenol	ABB.
p-Butylaniline	TMA.
3-(N-Butylanilino)propionitrile	TCH.
p-tert-Butylbenzaldehyde	GIV.
2-tert-Butyl-p-cresol	FER.
6-tert-Butyl-m-cresol	KPT.
tert-Butylhydroquinone	UPJ.
t-Butyl-(4-hydroxybenzyl)benzene	TMA.
2-[(1-Butyl-2-methylindol-3-yl]carbonylbenzoic acid	X.
o-sec-Butylphenol	SCN, TMA.
o-tert-Butylphenol	TMA.
p-sec-Butylphenol	SCN.
p-tert-Butylphenol	SCN.
*Butylphenols, mixed	FER, SCN, TMA, X.
p-tert-Butyltoluene	GIV.
5-tert-Butyl-1,2,3-trimethylbenzene	GIV.
5-tert-Butyl-m-xylene	GIV.
6-tert-Butyl-2,4-xylenol	FER.
n-Carboxy-n-methylanthranilic anhydride	SW.
Cephalosporin D	BRS.
2'-Chloroacetoacetanilide	EKT, HST.
4'-Chloroacetophenone	LIL.
o-Chloroaniline	CWN, DUP.
m-Chloroaniline	FST, VTC.
p-Chloroaniline	DUP, MON.
1-Chloroanthraquinone	CGY.
2-Chloroanthraquinone	ACY.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	CGY.
*Chlorobenzene, mono	DOW, MON, PPG, SCC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-Chlorobenzenesulfinic acid	CGY.
p-Chlorobenzenesulfonic acid	UPF.
p-Chlorobenzophenone	PD.
4-Chloro-2-benzothiazolamine	SDC.
o-Chlorobenzylamine	ARA.
2-Chloro-N,N-disopropylethylamine hydrochloride	SOL.
2-Chloro-1,4-dibutoxybenzene	ALL.
1-Chloro-2,5-dibutoxy-4-nitrobenzene	ALL.
2-Chloro-1,4-diethoxybenzene	ALL.
1-Chloro-2,5-diethoxy-4-nitrobenzene	ALL.
4'-Chloro-2',5'-dimethoxyacetoacetanilide	PCW.
2-Chloro-1,4-dimethoxybenzene	PCW.
4-Chloro-2,5-dimethoxynitrobenzene	PCW.
2-[p-Chloro-α-(2-dimethylaminoethyl)benzyl]pyridine	SK.
2-Chloro-10-[3-(dimethylamino)propyl]phenothiazine	SK.
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	SDC.
3-Chlorodiphenylamine	SK.
N-(2-Chloroethyl)-N-ethylaniline	TCH.
p-[(2-Chloroethyl)methylamino]benzaldehyde	VPC.
1-Chloro-2-methylanthraquinone	CGY.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	CGY.
2-Chloro-10-[3(4-methyl-1-piperazinyl)propyl]-phenothiazine	SK.
2-[(Chloromethyl)thiol]benzothiazole	BKM.
4-Chloro-3-nitrobenzamide	PCW.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	DUP, MON.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	DUP, MON.
4-Chloro-3-nitrobenzenesulfonamide	CGY.
2-Chloro-5-nitrobenzenesulfonic acid	CGY.
4-Chloro-3-nitrobenzenesulfonic acid	CGY.
4-Chloro-3-nitrobenzenesulfonyl chloride	SDC.
2-Chloro-4-nitrobenzoic acid	SAL.
2-Chloro-5-nitrobenzoic acid	CGY.
2-Chloro-4-nitrobenzoic acid, potassium salt	SAL.
4-Chloro-3-nitrophenylmethyl sulfone	CGY.
α-Chloro-4-nitrotoluene	EK.
2-Chloro-4-nitrotoluene	DUP, PCW.
2-Chlorophenothiazine	SK.
o-Chlorophenylcyclopentyl ketone	PD.
(m-Chlorophenyl)diethanolamine	HST.
4-Chloro-o-phenylenediamine	FMT.
4,4'-[(2-Chlorophenyl)methylene]bis[N,N-dimethyl]-aniline	X.
1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-Chlorophenyl methyl sulfone	CGY.
4-Chlorophthalic acid	SW.
1-(3-Chloropropyl)-4-methylpiperazine	SK.
3-Chloropropyl-2,5-xylyl ether	PD.
2-Chloropyridine	NES, OMC.
4-Chlororesorcinol	PCW.
o-Chlorotoluene	HK.
m-Chlorotoluene	HK.
-Chlorotoluene (Benzyl chloride)	MON, SFS, VEL.
3-Chloro-p-toluidine [NH_2=1]	DUP.
p-Chloro-α,α,α-trifluorotoluene	HK.
4-Chloro-3,5-xylenol	FER.
Cinnamic acid	KF.
Copper,[2,2',2'',2'''-[29H,31H-phthalocyaninepentylpentakis(methylene)]pentakis[1H-isoindole-1,3(2H)-dionato]]	X.
*CRESOLS:	
m-Cresol	KPT, MER.
*O-CRESOL:	
o-Cresol, from petroleum	FER, GE, KPT, MER, SW.
p-Cresol	MER, SW.
CRESOLS, MIXED:	
(M,P)-CRESOL:	
(m,p)-Cresol, from petroleum	FER, MER, NPC.
(O,M,P)-CRESOL:	
(o,m,p)-Cresol, from coal tar	KPT.
CRESYLIC ACID, REFINED:	
Cresylic acid, refined; from petroleum	FER, MER.
*Cumene (Isopropyl benzene)	ASH, CLK, GOC, GP, GRS, KHI, SHC, SKO, TX.
2-[p-(Cyanoacetamido)phenyl]-6-methyl-7-benzothiazolesulfonic acid	VPC.
4-(Cyanoacetyl)morpholine	DUP.
N-Cyanoethyl N-acetoxyethylaniline	TCH.
Cyanoethyl cellulose	FKE.
N-[3-(2-Cyanoethyl)ethylamino]phenylacetamide	SDC.
N-Cyano-s-methyl-N-2(4-methyl-5-imidazolyl)-methylthioethylisothiourea	SK.
Cyanopyridine	RIL.
2,5-Cyclohexadiene-1,4-dione, dioxime	SDC.
*Cyclohexane	CRP, DUP, GOC, GRS, PLC, PPR, SUN, TX, UOC.
1,2-Cyclohexanedicarboxylic acid anhydride	BCC.
Cyclohexanol	ACS, DBC, DUP, MON.
*Cyclohexanone	ACS, CNP, DBC, DUP, MON, UCC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Cyclohexanone oxime	CNP.
Cyclohexene	USR.
3-Cyclohexene-1-carboxaldehyde	UCC.
4-Cyclohexene-1,2-dicarboxylic anhydride	DKA.
Cyclohexene oxide	USR.
β-(1-Cyclohexenyl)ethylamine	HXL.
Cyclohexylamine	ABB, USR, VGC.
Cyclooctadiene	DUP.
Cyclopropanecarbonyl chloride	PD.
Cyclopropanecarboxylic acid	PD.
2-Cyclopropylmethylamino-5-chlorobenzophenone	PD.
2-(N-Cyclopropylmethyl-N-phthalimidoacetyl)-amino-5-chlorobenzophenone	PD.
p-Cymene	HPC.
N-Cynoethyl N-hydroxy-m-toluidine	TCH.
Di-p-xylylene	HEX.
Diacenaphtho[1,2-j:1',2'-l]fluoranthene (Decacyclene)	SDC.
3-Diacetoxyethylaminobenzanilide	STC.
Dialkylbenzene	VST.
1,5-Diaminoanthraquinone	SDC.
2,4-Diaminobenzenesulfonic acid SO_3H=1	CGY.
1,3 Diaminocyclohexane	DUP.
1,4-Diamino-2,3-dihydroanthraquinone	CGY.
4,8(and 4,5)-Diamino-9,10-dihydro-1,5(and 1,8)-dihydroxy-9,10-dioxo-2,6(and 2,7)-anthracenedisulfonic acid	CGY.
1,4-Diamino-9,10-dihydro-9,10-dioxo-2,3-anthracenedicarboximide	VPC.
1,5-Diamino-4,8-dihydroxyanthraquinone	VPC.
4,4'-Diaminodiphenyl sulfone	CGY.
2,6-Diaminopyridine	RIL.
4,4'-Diamino-2,2'-stilbenedisulfonic acid	CGY.
2,5-Dianilinoterephthalic acid	SDC, VPC.
4-Diazo-2,5-dimethoxyphenolmorpholine	HST.
2-Diazo-1-naphthol-5-sulfonic acid, sodium salt	HST.
N-(4-Diazo phenyl) aniline 1/2 sulfate	HST.
3,9-Dibromo-7H-benz[de]anthracen-7-one	CGY.
m-Dibromobenzene	DAZ.
p-Dibromobenzene	DAZ.
(1,2-Dibromoethyl)benzene	DAZ.
2,6-Dibromo-4-nitroaniline	SDC.
2,6-Dibromo-4-nitrophenol	HST.
2,6-Dibromophenol	EK.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3,5-Dibromo-3'-trifluoromethylsalicylanilide (Fluorophene)	PCW.
p-Dibutoxybenzene (DBB)	ALL.
2,5-Dibutoxy-4-morpholinobenzenediazonium sulfate salt (DBB Sulfate)	ALL.
2,5-Dibutoxy-4-morpholinonitrobenzene	ALL.
Di-butyl-p-cresol	FER.
2,6-Di-tert-butyl-4-nonylphenol	GAF.
2,4-Di-tert-butylphenol	FER.
2,6-Di-sec-butylphenol	TMA.
2,6-Di-tert-butylphenol	TMA.
3,4-Dichloroaniline	DUP, MON.
1,5-Dichloroanthraquinone	CGY.
*o-Dichlorobenzene	MON, PPG, SCC, SOI.
m-Dichlorobenzene	MON.
*p-Dichlorobenzene	MON, PPG, SCC, SOI.
3,3'-Dichlorobenzidine base and salts	CWN, LAK.
3,4-Dichlorobenzotrifluoride	DAZ.
Dichlorobenzyl chloride	SFS.
4,6-Dichloro-1,3-dihydroxylbenzene	PCW.
Dichlorodiphenylsilane	DCC.
4,4'-Dichlorodiphenyl sulfone	UCC.
3,3'-Dichloro-4,4'-(2-hydroxy-3-anilido-1-napthyazo)-biphenyl	LAK.
2,6-Dichloro-3-methylaniline	SDC.
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)-benzenesulfonic acid	CGY.
Dichloromethylphenylsilane	DCC.
2,6-Dichloro-4-nitroaniline	CWN.
1,2-Dichloro-4-nitrobenzene	DUP, MON.
2,6-Dichlorophenylamidinourea hydrochloride	PD.
2,6-Dichloropyridine	OMC.
2,5-Dichlorosulfanilic acid [$SO_3H=1$]	VPC.
2,5-Dichloro-4-sulfobenzenediazonium sulfate	CGY.
p,α-Dichlorotoluene	HK.
2,6-Dichloro-m-toluidine	HST.
Dicyclohexylamine	ABB, VGC.
Dicyclohexylamine, nitrate salt	OMC.
*Dicyclopentadiene (includes Cyclopentadiene)	CXI, DOW, ENJ, SHC.
α,α-Diethoxyacetophenone	CWN.
p-Diethoxybenzene	ALL.
3-Diethylaminoacetanilide	CGY.
p-(Diethylamino)benzaldehyde	MCK, VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3'-[2-(Diethylamino)ethyl]-4'-hydroxyacetanilide	PD.
2[4-Diethylamino-2-hydroxybenzyl]benzoic acid	X.
7-Diethylamino-4-methylcoumarin, crude	PCW.
3-[(4'-N,N-Diethylamino)phenylazo]-1H-1,2,4-triazole	CGY.
N,N-Diethylaniline	BCC, DUP.
2,6-Diethylaniline	TNA.
Diethylbenzene	DOW.
N,N-Diethylcyclohexylamine	ABB.
3,5-Diethyl-1,2-dihydro-1-phenyl-2-propylpyridine	RIL.
N,N-Diethyl-3-ethoxyaniline	X.
N^1,N^1-Diethyl-4-methoxymetanilamide	PCW.
N,N-Diethyl-m-toluidine	DUP, FST.
N,N-Diethyl-p-toluidine	RSA.
3-(2',4',-Difluorophenyl)-2-hydroxybenzoic acid, sodium salt	HXL.
6,11-Dihydrodibenz(b,e)oxepin-11-one	PFZ, SK.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl	DAZ.
2,3-Dihydro-2,2-dimethyl-7-benzofuranol	FMN.
9,10-Dihydro-9,10-dioxo-1,5(and 1,8)-anthracenedisulfonic acid and salt	CGY.
2-[$_2$-(2,3-Dihydro-1,3-dioxo-1H-inden-2yl)-(quinolinyl)]---6-methylbenzothiazole-7-sulfonic acid	VPC.
2,3-Dihydro-2-[6-methyl-7-sulfo-2-benzothiazolyl]-2-quinolinyl-1,3-dioxo-1H-indene-5-carboxylic acid	VPC.
1,2-Dihydrotriamcinolone	X.
1,4-Dihydroxyanthraquinone	CGY, EKT.
1,5(and 1,8)-Dihydroxyanthraquinone	CGY.
2,4-Dihydroxybenzaldehyde	EK.
2,5-Dihydroxy-p-benzenedisulfonic acid, dipotassium salt	X.
3,4-Dihydroxybenzoic acid, methyl ester	PCW.
2,4-Dihydroxybenzophenone	ACY.
1,5-Dihydroxy-4,8-dinitroanthraquinone	VPC.
1,8-Dihydroxy-4,5-dinitroanthraquinone	CGY, EKT, VPC.
N,N-Di(β-hydroxyethyl)-m-chloroaniline	MIL.
3,5-Dihydroxy-N-(2-hydroxyethyl)benzamide	PCW.
Diisopropylbenzene	CLK, GP.
2,5-Dimethoxybenzaldehyde	UPJ.
m-Dimethoxybenzene	ACY.
2,5-dimethoxy-4-chloranilide	HST.
3,4-Dimethoxytoluene	HEX, TNA.
p-(Dimethylamino)benzaldehyde	ATL, EK.
m-(Dimethylamino)benzoic acid	SDH.
2-[4-(Dimethylamino)benzoyl]benzoic acid	EK, X.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-[[2-(Dimethylamino)ethyl](p-methoxylbenzyl)amino]-pyridine	HEX.
m-Dimethylaminophenol	ACY.
11-[3(Dimethylamino)propyl]-6H-hydroxydibenz(b,e)oxepin	PFZ, SK.
N-(3-(Dimethylamino)propyl)-isooctadecanamide	SBC.
4-Dimethylaminopyridine	NEP.
N,N-Dimethylaniline	BCC, DUP.
N,N-Dimethylbenzylamine	ARS, HXL, SW.
2,2'-Dimethyl-1,1'-bianthraquinone	CGY.
Dimethyl-1,4-cyclohexanedicarboxylate	EKT.
N,N-Dimethylcyclohexylamine	ABB.
1,1-Dimethyl-3-(m-hydroxyphenyl)urea	GLY.
2,5-Dimethyl-4(2)-morpholinylmethylphenol, hydrochloride	CGY, PCW.
N,N-Dimethyl-o-toluidine	RSA.
N,N-Dimethyl-p-toluidine	FST, HXL, RSA.
2,4-Dinitroaniline	HST, SDC.
p-(2,4-Dinitroanilino)phenol	SDC.
1,5(and 1,8)-Dinitroanthraquinone	SDC.
m-Dinitrobenzene	DUP.
Dinitrocaprylphenol	RH.
4,4'-Dinitrodiphenyl ether	DUP.
2,4-Dinitrophenol, tech.	SDC, VPC.
2,4-Dinitrophenoxyethanol	HML.
3,5-Dinitrosalicylic acid	SAL.
3,5-Dinitrosalicylic acid, methyl ester	SAL.
p-Dinitrosobenzene	LC.
4,4'-Dinitrostilbene-2,2'-disulfonic acid	CGY.
2,4-Dinitrotoluene	DUP, RUC.
2,4(and 2,6)-Dinitrotoluene	DUP, MOB, OMC, RUC, X.
3,5-Dinitro-o-toluic acid	SAL.
Dinonylhydroxybenzenesulfonic acid	X.
Dinonylphenol	GAF, TX.
Di-para-benzoquinone dioxime	LC.
2,4-Di-tert-pentylphenol	FER, PAS.
1,5-Diphenoxyanthraquinone	VPC.
Diphenylamine	RUC, USR, USS.
Diphenylchlorophosphate	SFS.
Diphenyldisulfide	PAH.
Diphenylphosphinous chloride	SFS.
1,3-Di-4-piperidylpropane	RIL.
4,4'-Dithiodianiline	SDC.
1,4-Di-p-toluidinoanthraquinone	CGY.
1,5-Diureidonaphthalene	SOI.

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TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Divinylbenzene	DOW, HST.
Dodecylaniline	MON.
Dodecylmethylbenzyl chloride	RH.
*p-Dodecylphenol	GAF, MCB, MON, SOC, TX.
Doxepin base	SK.
5-Ethanoxy-3-trichloromethyl-1,2,4-thiadiazole	OMC.
2,2'-(1,2-Ethenediyl)bis(5[[4-chloro-6-(phenylamino)-1,3,5-triazin-2-yl]amino]benzenesulfonic acid, disodium salt	X.
Ethisternone	SRL, UPJ.
4(5)-Ethoxycarbonyl-5(4)-methylimidazole	SK.
1-Ethoxy-3-methylbenzene	X.
4-Ethoxy-2-methyl-N-phenylaniline	X.
2-Ethoxy-1-naphthoic acid	WYT.
2-Ethoxy-1-naphthoyl chloride	WYT.
4-Ethoxy-2-nitroacetanilide	CGY.
4-Ethoxy-o-phenylenediamine	CGY.
Ethyl-alpha-cyano-beta-methyl cinnamate	PD.
3'-(Ethylamino)acetanilide	EKT.
o-Ethylaniline	TMA.
N-Ethylaniline, refined	ATL, BCC, DUP.
2-(N-Ethylanilino)ethanol	MIL, TCH.
3-(N-Ethylanilino)propionitrile	MIL, TCH.
α-(N-Ethylanilino)-m-toluenesulfonic acid	SDH.
*Ethylbenzene	AMO, ATR, CSD, DOW, DUP, ELP, GOC, HST, KHI, KPT, MCB, MON.
Ethylbenzyl chloride	SFS.
*2-(N-Ethyl-N,β-cyanoethyl)-4-acetaminoanisole	CGY, SDC, TCH.
N-Ethyl-N-(2,3-dihydroxypropyl)-m-toluidine	EKT.
16,17-Ethylenedioxyuiolanthrone	CGY.
N-Ethylmaleimide	REG.
1-Ethyl-3-methyhydantoin	GLY.
6-Ethyl-2-methylaniline	TMA.
6-Ethyl-2-methylformanilide	WYT.
1-Ethyl-2-methylindole	X.
9-Ethyl-3-nitrocarbazole	SDC.
p-Ethylphenol	SW.
N-Ethyl-N-phenylbenzylamine	SDH.
N-Ethyl-N-(3'-sulfobenzyl)aniline	VPC.
Ethyl toluene	DOW.
N-Ethyl-m-toluidine	DUP, FST.
3-(N-Ethyl-m-toluidino)propionitrile	TCH.
p-Fluoroaniline	OMC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4-Fluoro-3-nitroaniline	OMC.
4-Fluoro-3-nitrobenzotrifluoride	DAZ.
4-Fluorothiophenol, sodium salt	PAH.
o-Formylbenzenesulfonic acid, sodium salt	X.
1-Formylpiperidine	RIL.
Furan	QKO.
Furfuryl alcohol	QKO.
Furfurylamine	HXL.
1-(2-Furoyl)piperazine	PFZ.
Hexachlorocyclopentadiene	VEL.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic anhydride (Chlorendic anhydride)	VEL.
Hexahydro-1-methyl-4-phenyl-1H-azepine-4-carbonitrile	WYT.
Hexamethyleneimine	CXI, DUP.
Hydroquinonesulfonic acid, potassium salt	NES.
Hydroquinone, tech.	EKT, GYR.
p-Hydroxybenzenesulfonic acid	FER, UPF.
4-Hydroxycoumarin	SDW.
2'-Hydroxy-5,9-dimethyl-6,7-benzomorphan	SD.
2,2'-[[4-(2-Hydroxyethylamino)-3-nitrophenyl]imino]-diethanol	SOL.
N-β-Hydroxyethyl-2,4-dihydroxybenzamide	PCW.
4-Hydroxymetanilamide	CGY.
4-Hydroxymetanilic acid	CGY.
2-Hydroxymethylene-17α-ethinylandrost-17β-ol-4-en-3-one	SD.
4-Hydroxy-N'-methylmetanilamide	CGY.
4(5)-Hydroxymethyl-5(4)-methylimidazole hydrochloride	SK.
3-Hydroxy-N-(3-N-morpholino-γ-propyl)-2-naphthimide	PCW.
7-Hydroxy-1,3-naphthalenedisulfonic acid	CGY.
3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	CGY.
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt	SDH.
8-Hydroxy-1-naphthalenesulfonic acid,γ-sultone	CGY.
3-Hydroxy-2-naphthoic acid (B.O.N.)	PCW.
3-Hydroxy-2-naphthoic acid, aminopropylmorpholide	HST.
3-Hydroxy-2-naphthoic acid, ethanolamide	PCW.
1-Hydroxynaphthoic acid, methyl ester	PCW.
3-Hydroxy-2-naphthoic acid, methyl ester	PCW.
3-Hydroxy-2-naphthoic acid, sodium salt	PCW.
2-Hydroxy-4-n-octoxybenzophenone	CCW.
p-Hydroxyphenyl-3-methylbutyric acid	HEX.
11α -Hydroxyprogesterone	UPJ.
3-Hydroxy-5'-quinophthalonecarboxylic acid	CGY.
10-(p-Iodophenyl)undecanoic acid, ethyl ester	X.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Isatoic anhydride	SW.
Isobutylbenzene	PLC, THA.
*ISOCYANIC ACID DERIVATIVES:	
Bitolylene diisocyanate (TODI)	CWN.
*Diphenylmethane-4,4'-diisocyanate (MDI)	BAS, MOB, RUC, UPJ.
Isocyanic acid,p-chlorophenyl ester	MOB.
Isocyanic acid, cyclohexyl ester	MOB.
Phenylisocyanate	MOB.
*Polymethylene polyphenylisocyanate	BAS, MOB, RUC, UPJ, WTC.
Toluene 2,4-diisocyanate	DUP, MOB.
*Toluene 2,4-and 2,6-diisocyanate (80/20 Mixture)	BAS, DOW, MOB, OMC, RUC.
Toluene 2,4-and 2,6-diisocyanate (65/35 Mixture)	MOB.
p-Toluenesulfonyl isocyanate	CWN.
Isocyanic acid derivatives, all other	UCC.
Isonicotinamide	RIL.
Isonicotinic acid	RIL.
Isonicotinic acid, methyl ester	RIL.
Isophthalic acid (Benzene-1,3-dicarboxylic acid)	AMO.
Isophthalonitrile	SW.
Isophthaloyl chloride	DUP, TLC.
N-Isopropylaniline	FST, USR.
Isopropylbiphenyl	TCC.
4,4'-Isopropylidenebis[2,6-dibromophenol] (Tetrabromobisphenol A)	DOW.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene-$_{\alpha,\alpha}$'-diol)	ARK.
*4,4'-Isopropylidenediphenol (Bisphenol A)	DOW, GE, SHC, USS.
4,4'-Isopropylidenediphenol, ethoxylated	ICI.
4,4'-Isopropylidenediphenol, propoxylated	ICI.
o-Isopropylphenol	FER, THA.
p-Isopropylphenol	FER.
Isopropylphenol, mixed	FMC.
Isothiocyanic acid, phenyl ester	EK.
Leuco quinizarin (1,4,9,10-Anthratetrol)	CGY.
2,3-Lutidine	RIL.
2,4-Lutidine	RIL.
3,5-Lutidine	RIL.
Malonanilide	PCW.
Melamine	ACY, GIV, MLC.
dl-p-Mentha-1,8-diene (Limonene)	ARZ, NCI.
Metanilic acid (m-Aminobenzenesulfonic acid)	CGY.
4-Methoxyacetanilide	CGY.
2-Methoxyethylpiperidine	RIL.
N-(4-Methoxy-3-nitrophenyl)acetamide	SDC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
(p-Methoxyphenyl)acetic acid	HEX.
N[4[1-[(2-Methoxyphenylamino)carbonyl]-2-oxopropylazophenyl]-4-[1[(2-methoxyphenylamino)-carbonyl]-2-oxopropylazo]-benzamide]	X.
3-Methoxythiophenol	PAH.
4-Methylacetophenone	UPJ.
2-Methyl-5-acetylpyridine	RIL.
1-(Methylamino)anthraquinone	CGY.
2-(N-Methylanilino)ethanol	TCH.
3-(N-Methylanilino)propionitrile	MIL, TCH.
2-Methylanthraquinone	ACY.
3-Methylbenzo[f]quinoline	ACY, OMC.
2-Methylbenzothiazole	FMT.
o-Methylbenzyl chloride	SFS.
Methyl benzyl ether	GRS.
Methyl N-(α-carboxydihydrobenzyl)-β-aminocrotonate, sodium salt	TRD.
1-Methyl-4-(3-chloropropyl)piperazine	SK.
1-Methyl-4-(3-chloropropyl)piperazine hydrochloride	SK.
Methylcyclohexane	PLC.
N-Methylcyclohexylamine	ABB.
Methyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboate-	FMN.
N-Methyldicyclohexylamine	ABB.
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol)	CPS.
4-Methyl-2,6-dinitrophenol	SDC, SW.
4,4-Methylenebis (2,6-di-tert-butylphenol)	THA.
4,4'-Methylenebis[N,N-diethylaniline]	ACY.
4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	ACY, SDH.
4,4'-Methylenebis[3-hydroxy-2-naphthoic acid], disodium salt	EK.
4,4'-Methylenedianiline	OMC, RUC, USR.
1,2-Methylenedioxybenzene	CRZ.
1,2-Methylenedioxy-4-nitrobenzene	PD.
5,5'-Methylenedisalicylic acid	KLM.
Methylhydroquinone	EKT.
(2,4-Methyl-5-imidazolyl)methylthioethylamine dihydrochloride	SK.
4-Methyl-2-imino-1,3-dithiolane hydrochloride	LAK.
N-Methyl-p-nitroaniline	ACY.
4-Methyl-2-nitroanisole	SW.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride	BCC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl) benzenesulfonic acid	CGY.
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Methyl-5-phenylbenzoxazole	EK.
1-Methyl-4-phenylisonipecotic acid	WYT.
1-Methyl-4-phenylisonipecotonitrile	WYT.
4-Methylphthalic acid	EK.
4-Methylphthalic anhydride	SFS.
3-Methylpiperidine	RIL.
α-Methylstyrene	CLK, CXI, GP, USS.
ar-Methylstyrene (Vinyltoluene)	DOW, HST.
1-Naphthaldehyde	GNW.
1-Naphthalenesulfonic acid	CGY.
2-Naphthalenesulfonic acid	ACY.
1-Naphthalenesulfonic acid, 5-<(4-hydroxyphenyl)	SDC.
1-Naphthalenesulfonic acid, 8-(phenylamino)-monosodium salt	SDC.
1-Naphthalenesulfonic acid, sodium salt	CGY.
2-Naphthalenesulfonic acid, sodium salt	GNW.
1,4,5,8-Naphthalenetetracarboxylic acid	CGY.
Naphthalimide	SDC, VPC.
1-Naphthoic acid	GNW.
1-Naphthol (α-Naphthol)	UCC.
Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	CGY.
1-Naphthylamine (α-Naphthylamine)	DUP.
p-(2-Naphthylamino)phenol (N-(p-Hydroxyphenyl)-2-naphthylamine)	SDC.
Nicotinonitrile (3-Cyanopyridine)	NEP, RIL.
3-Niro-6-pyrrolodinyl toluene	ALL.
3'-Nitroacetanilide	EKT.
4'-Nitroacetanilide	CGY.
*o-Nitroaniline	BUC, DUP, MON.
p-Nitroaniline	DUP, MON.
5-Nitroanthranilic acid	CGY, TLI.
p-Nitrobenzamide hydrochloride	PD.
*Nitrobenzene	DUP, FST, ICI, MOB, BUC.
m-Nitrobenzenesulfonic acid	CGY.
m-Nitrobenzenesulfonic acid, sodium salt	USH.
o-Nitrobenzoic acid	SAL.
m-Nitrobenzoic acid	SAL, SDH.
p-Nitrobenzoic acid	DUP.
m-Nitrobenzoic acid, sodium salt	SAL.
p-Nitro benzyl alcohol	SDW.
2-Nitro-p-cresol	SW.
5-Nitrodimethylisophthalte	SAL.

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TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Nitrodiphenylamine	ACY, MON.
5-Nitroisophthalic acid	LAK, SAL.
3-Nitro-4-methoxyacetanilide	CGY.
3-Nitro-4-methylacetophenone	TLI.
4-Nitro-N-methylphthalimide	LAK.
5-Nitromonomethylisophthalate	SAL.
1-Nitronaphthalene	DUP.
7(and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	CGY.
p-Nitrophenethyl alcohol	PCW.
o-Nitrophenol	MON.
p-Nitrophenol	DUP, MON.
p-Nitrophenol, sodium salt	DUP.
2-(o-Nitrophenylazo)-p-cresol (OH=1)	CGY.
2-(o-Nitrophenylazo)-4,6-di-tert-pentylphenol (OH=1)	CGY.
5-Nitrosalicylaldehyde	EK.
p-Nitrosophenol	LC, SDC, VPC.
4-Nitrosophenol, sodium salt	SDC.
N-Nitroso-N-phenylhydroxylamine, ammonium salt	FKE.
o-Nitrotoluene	DUP, FST.
m-Nitrotoluene	DUP, FST.
p-Nitrotoluene	DUP, FST.
Nitrotoluene mixtures	FST.
p-Nitrotoluene-o-sulfonic acid	CGY.
5-Nitro-o-toluidine [NH_2=1]	PCW.
Nonyl-dinonylphenol, mixture	USR.
*Nonylphenol	GAF, KLM, MCB, MON, RH, SCN, TX.
Norborene-2,3-dicarboxylic acid, monomethyl ester	BJL.
Octylphenol	RH, SCN.
Octylphenoxydiethoxy chloride	RH.
Oxidiphthalic anhydride	PAH.
1-[(7-Oxo-7H-benz[de]anthracene-3-yl)amino]-anthraquinone	CGY.
1,1'-[(7-Oxo-7H-benz[de]anthracen-3,9-ylene)-diimino]-dianthraquinone	CGY.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester	VPC.
Oxyaluminum benzoate	CHT.
4,4'-Oxydianiline	DUP.
para-Pentyloxyphenol	EK.
Pentabromochlorocyclohexane	DOW.
Pentabromoethylbenzene	TNA.
1,1,3,3,5-Pentamethylindan	GIV.
o-Pentylphenol (o-Amylphenol)	PAS, X.

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TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-tert-Pentylphenol	PAS.
Permethrin acid chloride	VTC.
3,4,9,10-Perylenetetracarboxylic-3,4:9,10-dianhydride	VPC.
3,4,9,10-Perylenetetracartoxylic-3,4:9,10-diimide	SDC, VPC.
Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone	SDC.
1,10-Phenanthroline	VNC.
α-Phenethylamine	HXL.
2-Phenethylamine	HXL.
p-Phenetidine	MON.
*PHENOL:	
NATURAL:	
FROM PETROLEUM:	
Phenol, natural, from petroleum, U.S.P.	MER.
Phenol, natural, from petroleum, all other	FER.
SYNTHETIC:	
Phenol, benzylated	MIL.
Phenol, styrenated	MIL.
Phenol, synthetic, from chlorobenzene by vapor-phase hydrolysis, U.S.P.	SKO.
*Phenol, synthetic, from cumene by oxidation, U.S.P.	ACS, CLK, DOW, GE, GP, MON, SHC, USS.
Phenol, synthetic, from toluene by oxidation, U.S.P.	KLM.
Phenolsulfonaphthalein, sodium salt	EK.
Phenolsulfonic acid, sodium salt	SAL.
Phenoxyacetic acid, sodium salt	NCC.
3-Phenoxybenzaldehyde	TNA.
3-Phenoxybenzenemethanol	TNA.
2-(Phenoxymethyl)benzoic acid	PFZ, SOL.
m-Phenoxytoluene	MER.
Phenylacetic acid, potassium salt	OPC, SFS.
Phenylacetic acid, sodium salt	OPC.
2-(N-phenylamino)-9-acridanone	X.
2,2'-[(Phenyl)amino]diethanol, diacetic ester	CGY.
p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride	CGY.
4-(Phenylazo)diphenylamine	EK.
4-Phenyl-3-buten-2-one (Benzylidene acetone)	SDW.
o-Phenylenediamine	CGY, DUP, SW.
m-Phenylenediamine	DUP.
p-Phenylenediamine	DUP, NES, SDC.
d-Phenylephrine	SDW.
dl-Phenylephrine base	SDW.
Phenyl ether (Diphenyl oxide)	DOW, MON.
d(+)α-Phenylethylamine	HXL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Phenylglycine, potassium salt	BCC, KF.
Phenylglycine, sodium salt	BCC, LIL.
2,2'-[(Phenyl)imino]diethanol (N-Phenyldiethanolamine)	EKT, TCH.
2,2'-[(Phenyl)imino]diethanol, diacetate ester	MIL.
Phenylmercuric carboxylate	COS.
3-Phenyl-5-methylisoxazole-4-carbonyl chloride	TCH.
Phenyl-α-naphthylamine	UCC.
o-Phenylphenol	DOW.
p-Phenylphenol	DOW.
o-Phenylphenol, sodium salt	DOW.
N-Phenyl-p-phenylenediamine	USR.
Phenylphosphinic acid	FER.
Phenylphosphonothioic dichloride	SFS.
Phenylphosphorous dichloride	FER, SFS.
1-Phenyl-1,2-propanedione, 2-oxime	ORT.
4-Phenylpropylpyridine	NEP, RIL.
4-Phenylpyridine-N-oxide	RIL.
1-Phenyl-2-tetrazoline-5-thione	EK.
4-Phenylthiomorpholine-1,1-dioxide	EKT.
Phthalic acid	EK.
*Phthalic anhydride	DBC, ENJ, KPT, MON, STP, TU.
Phthalimide	SW.
Phthalimidoacetic acid	PD.
Phthalocyaninato(2-)copper	DUP, PHC.
Phthalocyaninebissulfonyl chloride, copper derivative	VPC.
Phthalocyaninetetramethanaminatocopper	X.
Phthalocyaninetetrasulfonyl chloride, copper derivative	VPC.
Phthaloyl chloride (Phthalyl chloride)	TLC.
PICOLINES:	
Picoline (3,4-mixture)	RIL.
2-Picoline (α-Picoline)	RIL.
3-Picoline (β-Picoline)	NEP, RIL.
4-Picoline (γ-Picoline)	RIL.
3-Picoline-N-oxide	RIL.
Picolinic acid	NEP.
Picolinonitrile (2-Cyanopyridine)	NEP.
2-Picolylamine	RIL.
3-Picolylamine	RIL, SDC.
2-Pipecoline	RIL.
Piperazine mixture, crude	TX.
Piperidine	ABB, RIL.
Polyethylbenzene (80 percent diethylbenzene)	ELP.
Propiophenone	HEX, ORT, UCC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
8,16-Pyranthrenedione	PCW.
1,3,6,8-Pyrenetetrasulfonic acid	X.
PYRIDINE, REFINED:	
2 Pyridine, refined	NEP, RIL.
Pyridine hydrochloride	RSA.
3-Pyridinemethanol	RIL.
2 Pyridinethiol-1-oxide, sodium salt	OMC.
2 Pyridinethiol-1-oxide, zinc salt	OMC.
Pyridinium bromide perbromide	ARA.
2-(4-Pyridyl)ethylsulfonic acid	RIL.
2-Pyrimidinol	CGY.
2-Pyrrolidinone (2-Pyrrolidone)	GAF.
Pyrvinium pamoate	X.
Quinaldine	ACY.
QUINOLINE:	
Quinoline, 1 and 2	KPT.
Quinoline, other grades	KPT.
8-Quinolinol	SOL.
8-Quinolinol zinc salt	SOL.
Quinone dioxime	LC.
Resorcinol, tech,	KPT.
β-Resorcylic acid, lead salt	KPT.
Salicylaldehyde	RDA.
Salicylaldehyde oxime	EK.
Salicylanilide	LEM, PCW.
*Salicylic acid, tech.	DOW, KLM, MON, SDH.
*Styrene (Vinylbenzene)	AMO, ATR, CSD, DOW, ELP, GOC, HST, MCB, MON, SHC, SKO, USS.
Sulfaguanidine	SAL.
5-Sulfoisophthalic acid, 1,3-dimethyl ester, sodium salt	DUP.
5-Sulfoisophthalic acid, sodium salt	PCW.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenyl sulfone)	CRZ.
4-Sulfophthalic acid	CWM.
Terephthalic acid	AMO, HCF.
*Terephthalic acid, dimethyl ester	DUP, EKT, HCF.
Terephthaloyl chloride	DUP, TLC.
Terephthaloyldiacetic acid, diethyl ester	PCW.
Terphenyl (Phenylbiphenyl) (m-,o-,and p-isomers)	MON.
Tetrabromophthalic anhydride	TMA.
2,4,4',5'-Tetrachlorophenylsulfone	SDH.
Tetrachlorophthalic anhydride	MON.
Tetrahydrobenzyl alcohol	UCC.
*Tetrahydrofuran	BAS, DUP, GAF, QKO.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1,2,3,4-Tetrahydronaphthalene	UCC.
1,2,4,5-Tetramethylbenzene (Durene)	KHI.
p-(1,1,3,3-Tetramethylbutyl)phenol	GAF.
1,3,6,8-Tetranitro-9H-carbazole	SDC.
Thiodiphenol	CRZ.
2-Thiopheneacetyl chloride	SFS.
2-Thiophenecarboxaldehyde	EKT, TNA.
Thiophenol	SFA.
Toluene-2,3-(and 3,4)-diamine (35/65 Mixture)	OMC.
*Toluene-2,4-diamine (4-m-Tolylenediamine)	OMC, RUC, UCC, X.
Toluene-2,4-(and 2,6)-diamine (80/20 Mixture)	OMC.
Toluene-3,4-diamine	X.
*p-Toluenesulfonic acid	NES, TEN, UPF.
p-Toluenesulfonic acid, aniline salt	NES.
p-Toluenesulfonic acid, copper salt	NES.
p-Toluenesulfonyl chloride	MON.
o-Toluic acid	WTC.
m-Toluic acid	WTC.
p-Toluic acid, methyl ester	HCF.
o-Toluidine	DUP, FST.
m-Toluidine	DUP, FST.
p-Toluidine	DUP, FST.
Toluidines, mixed	FST.
o-Toluidinomethanesulfonic acid	ATL, CGY.
1-p-Tolyldodecane	RH.
2,2'-(m-Tolylimino)diethanol	MIL, TCH.
2,2'-(m-Tolylimino)diethanol, diacetate ester	SDC.
Tolyltriazole	SW, WAY.
Toyltriazine, sodium salt	DIX.
2,4,6-Triamino-5-nitrosopyrimidine	SK.
N,N,N-Tribenzylamine	HKL.
2,4,6-Tribromophenol	GTL.
3,4',5-Tribromosalicylanilide	PCW.
1,2,3(and 1,2,4)-Trichlorobenzene	PPG, SCC.
1,2,4-Trichlorobenzene	SCC.
1,1,1-Trichloro-2,2-diphenylethane	CWM.
3-Trichloromethyl-1,2,4-thiadiazole	OMC.
1,2,4-Trichloro-5-nitrobenzene	PCW.
Trichlorophenylsilane	DCC.
α,α,α-Trichlorotoluene (Benzotrichloride)	MK, VEL.
2,3,6-Trichlorotoluene	OMC.
2,4,6-Trichloro-s-triazine (Cyanuric chloride)	DGC.

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TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Tri(dimethylaminomethyl)phenol	PEL.
2-(Trifluoromethyl)phenothiazine	SK.
α,α,α-Trifluoro-m-toluidine	OMC.
Triflurodiphenylamine	SK.
2,4,3'-Trihydroxydiphenyl	PCW.
Trimellitic trichloride	TLC.
1,2,4-Trimethylbenzene (Pseudocumene)	KHI.
2,3,3-Trimethyl-3H-indole	VPC.
1,3,3-Trimethyl-δ^{2}, α-indolineacetaldehyde	VPC.
1,3,3-Trimethyl-2-methyleneindoline	VPC.
Trimethylphenylammonium chloride	X.
Triphenylmethane	EK.
Triphenylphosphine	X.
Triphenylsulfonium chloride	SOL.
Triphenylsulfonium hexafluorophosphate	SOL.
α,α',α''-Tris(dimethylamino)mesitol	RH.
Tris(2-methyl-1-aziridinyl)phosphine oxide	ARS.
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J-Acid urea)	CGY.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)	GIV.
Vinylcyclohexane	DUP.
Vinylcyclohexene monoxide	UCC.
2-Vinylpyridine	RIL.
4-Vinylpyridine	RIL.
*o-Xylene (90-100% of o-xylene isomer)	ATR, DUP, ENJ, KHI, PPR, SHC, TOC.
m-Xylene (90-100% of m-xylene isomer)	AMO.
*p-Xylene (90-100% Of p-xylene isomer)	AMO, ATR, ENJ, KHI, PPX, SOC, STX, TOC.
2,4-Xylenesulfonic acid	UPF.
2,5-Xylenesulfonic acid	NES.
2,6-Xylenol	GE.
3,5-Xylenol	FER.
XYLIDINES:	
2,4-Xylidine (m-4-Xylidine)	DUP.
2,6-Xylidine	TMA.
Xylidine, original mixture	DUP.
Cyclic intermediates, all other	ACY, ALD, ANG, ARA, CGY, DAZ, DUP, FER, HCF, HEX, HK, HST, HXL, LC, MCK, MIL, MRT, NES, NOD, OMC, PAH, PCW, PD, PFZ, REG, RIL, RSA, SDC, SDW, SOL, STC, SW, TCH, TMA, UCC, UPJ, UPJ, UPJ, VPC, WTC, X, X, X, X, X, X.

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of cyclic intermediates to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ABB	Abbott Laboratories
ACY	American Cyanamid Co.
ACS	Allied Corp., Chemical Sector
AIC	Chemsampco, Inc., DBR, Albany International Corp., Chemical Div.
ALD	Aldrich Chemical Co., Inc.
ALL	Alliance Chemical, Inc.
AMB	American Bio-Synthetics Corp.
AMO	Standard Oil Co. (Indiana)
ANG	Angus Chemical Co.
ARA	Syntex Chemicals, Inc.
ARK	Armstrong World Industries, Inc.
ARS	Arsynco, Inc.
ARZ	Arizona Chemical Co.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.
ATL	Atlantic Industries, Inc.
ATR	Atlantic Richfield Co., Arco Chemical Co.
BAS	BASF Wyandotte Corp.
BCC	Buffalo Color Corp.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group
BJL	American Burdick & Jackson
BKM	Buckman Laboratories, Inc.
BRD	Lonza, Inc.
BRS	Bristol-Myers Co.
BUC	Synalloy Corp., Blackman-Uhler Chemical Div.
CCW	Morton-Thiokol, Inc., Carstab Div.
CGY	Ciba-Geigy Corp.
CHF	Kincaid Enterprises, Inc.
CHT	Chattem, Inc.
CLK	Clark Oil & Refining Corp.
CNP	Nipro, Inc.
COS	Cosan Chemical Corp.
CPS	CPS Chemical Co., Inc.
CRP	Corpus Christi Petrochemical Corp.
CRZ	Crown Zellenback Corp., Chemical Products Div.
CSD	Cosden Oil & Chemical Co.
CWN	Upjohn Co., Fine Chemical Div.
CXI	Chemical Exchange Industries, Inc.
CYH	Cychem, Inc.
DAZ	Diaz Chemical Corp.
DBC	Badische Corp.
DCC	Dow Corning Corp.
DGC	Degussa Corp.
DIX	Dixie Chemical Co., Inc.
DKA	Denka Chemical Corp.
DOW	Dow Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.
EK	Eastman Kodak Co.:
EKT	Tennessee Eastman Co. Div.
ELP	El Paso Products Co.
ENJ	Exxon Chemical Americas
FER	Ferro Corp.: Grant Chemical Div. Ottawa Chemical Div. Productol Chemical Div.
FKE	Frank Enterprises, Inc.
FMC	FMC Corp.:
FMN	Agriculcural Chemical Group
FMT	Fairmount Chemical Co., Inc.
FST	First Chemical Corp.
GAF	GAF Corp., Chemical Group
GE	General ELectric Co.
GIV	Givaudan Corp.
GLY	Glyco, Inc.
GNW	Greenwood Chemical Co.
GOC	Gulf Oil Corp., Gulf Oil Products Co.
GP	Georgia-Pacific Corp.: Houston Div. Plaquemine Div.
GRS	Champlin Petroleum Co.
GTL	Great Lakes Chemical Corp.
GYR	Goodyear Tire & Rubber Co.
HCF	Hercofina
HEX	Hexagon Laboratories, Inc.
HK	Occidental Chemical Corp., Industrial Specialty Chemical Div.
HML	Hummel Chemical Co.
HPC	Hercules, Inc.
HST	American Hoechst Corp.: Petrochemicals/Plastics Group Specialty Products Group, Rhode Island Works
HXL	Hexcel Corp., Hexcel Chemical Products
ICI	ICI Americas, Inc., Chemicals Div.
KF	Kay-Fries, Inc., Chemical Div., Dynamit Nobel of America, Inc.
KHI	Koch Refining Co.
KLM	Kalama Chemical, Inc.
KPT	Koppers Co., Inc.
LAK	Bofors Nobel, Inc.
LC	Lord Corp., Chemical Products Group
LEM	Napp Chemicals, Inc.
LIL	Eli Lilly & Co.
MAL	Mallinckrodt, Inc.
MCB	Borg-Warner Corp., Borg-Warner Chemicals
MCK	MacKenzie Chemical Works, Inc.
MER	Morichem Co.
MIL	Milliken & Co., Milliken Chemical Co.
MLC	Melamine Chemicals, Inc.
MOB	Mobay Chemical Co., Pittsburgh Div.
MON	Monsanto Co.
MRT	Morton-Thiokol, Inc., Morton Chemical Div.
NCC	Niacet, Inc.
NCI	Union Camp Corp., Terpene & Aromatics Div.
NEP	Nepera, Inc.
NES	Ruetgers-Nease Chemical Co.
NOD	Nuodex, Inc.
NPC	Northwest Petrochemical Corp.
NSC	National Starch & Chemical Corp.
OMC	Olin Corp.
OPC	Orbis Products Corp.
ORT	Roehr Chemicals, Inc.
PAN	Parish Chemical Co.
PAS	Pennwalt Corp.
PCW	Pfister Chemical, Inc.
PD	Parke-Davis Div. of Warner Lambert Co.

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1984--Continued

CODE	NAME OF COMPANY
PEL	Pelron Corp.
PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
PHC	Phthalchem, Inc.
PLC	Phillips Petroleum Co.
PLN	Disogrin Industries Corp.
PPG	PPG Industries, Inc.
PPR	Phillips Puerto Rico Core, Inc.
PPX	Phillips Paraxylene, Inc.
QKO	QO Chemicals, Inc.
RDA	Rhone-Poulenc, Inc.
REG	Regis Chemical Co.
RH	Rohm & Haas Co.
RIL	Reilly Tar & Chemical Corp.
RSA	R.S.A. Corp.
RUC	Rubicon, Inc.
SAL	Salsbury Laboratories, Inc.
SBC	Scher Chemicals, Inc.
SCC	Standard Chlorine of Delaware, Inc.
SCN	Schenectady Chemicals, Inc.
SD	Sterling Drug, Inc., Sterling Pharmaceuticals, Inc.
SDC	Sandoz Chemicals Corp.
	Sterling Drug, Inc.:
SDH	Hilton Davis Chemical Co.
SDW	Sterling Organics Div.
	Stauffer Chemical Co.:
SFA	Agricultural Div.
SFS	Specialty & Intermediates Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
SKO	Texaco Refining & Marketing, Inc.
SOC	Chevron Corp., Chevron Chemical Co.
SOI	Specialty Organics, Inc.
SOL	Southland Corp., Fine Chemical Div.
SRL	G. D. Searle & Co.
STC	American Hoechst Corp., Sou-Tex Works
STP	Stepan Chemical Co.
STX	St. Croix Petrochemical Corp.
SUN	Sun Company, Inc.
SW	Sherwin-Williams Co., Chemical Div.
TCC	Sybron Chemical, Inc.
TCH	Emery Industries, Inc., Trylon Div.
TEN	Tennessee Chemical Co.
TLC	Twin Lake Chemical, Inc.
TLI	Teledyne Industries, Inc., Teledyne McCormick Selph
TNA	Ethyl Corp.
TOC	Tenneco Oil Co.
TRD	Squibb Manufacturing, Inc.
TU	Tenn-USS Chemicals Co.
TX	Texaco, Inc., Texaco Chemical Co.
UCC	Union Carbide Corp.
UOC	Union Oil Co., of California
UPF	Jim Walter Resources, Inc.
UPJ	Upjohn Co. & Polymer Chemical Div.
USM	Crown Metro, Inc.
USR	Uniroyal, Inc., Chemical Group
USS	U.S. Steel Corp., USS Chemicals Div.
VEL	Velsicol Chemical Corp.
VGC	Virginia Chemicals, Inc.
VNC	Vanderbilt Chemical Corp.
VPC	Mobay Chemical Corp., Dyes & Pigments Div.
VST	Vista Chemical Co.
VTC	Vertac Chemical Corp.
WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
WTC	Witco Chemical Corp.
WYK	Wyckoff Chemical Co., Inc.
WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

STATISTICAL HIGHLIGHTS

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Synthetic dyes are derived in whole or in part from cyclic intermediates. Approximately two-thirds of the dyes consumed in the United States are used by the textile industry to dye natural and synthetic fibers or fabrics; about one-sixth is used for coloring paper; and the rest is used chiefly in the production of organic pigments and in dyeing leather and plastics. Of the several thousand different synthetic dyes that are known, more than one thousand are manufactured by domestic producers, collectively. The large number of dyes results from the many different types of materials to which dyes are applied, the different conditions of service for which dyes are required, and the cost that a particular use can bear. Dyes are sold as pastes, powders, lumps, and solutions. Concentrations vary from 6 percent to 100 percent. The concentration, form, and purity of dye are determined largely by the use for which it is intended.

Total domestic production of dyes in 1984 amounted to 233 million pounds, or 4.8 percent less than the 244 million pounds produced in 1983 (table 1). Sales of dyes in 1984 amounted to 221 million pounds, valued at $691 million, compared with 234 million pounds, valued at $728 million, in 1983. In terms of quantity, sales of dyes in 1984 were 5.7 percent less than in 1983 and in terms of value, 5.1 percent less. The average unit value of sales of all dyes in 1984 was $3.13 per pound, compared with $3.11 per pound in 1983.

Production of four classes of dyes increased in 1984, while the remaining six major classes registered slight to moderate decreases in their production. Direct dyes increased by 10.1 percent from 27.7 million pounds in 1983 to 30.4 million pounds in 1984; solvent dyes increased by 24.0 percent to 10.9 million pounds in 1984 from 8.8 million pounds in 1983.

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TABLE 1.—DYES: U.S. PRODUCTION AND SALES, 1984

[Listed below are all dyes for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all dyes for which data on production and/or sales were reported and identifies the manufacturers of each]

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	232,615	220,520	690,808	$3.13
ACID DYES				
Total	25,111	24,039	96,203	4.00
Acid yellow dyes, total	4,291	4,271	11,973	2.80
Acid Yellow 17	144	217	997	4.60
Acid Yellow 23	108	88	392	4.44
Acid Yellow 49	342	263	736	2.80
Acid Yellow 151	1,596	1,589	3,220	2.03
All other	2,101	2,114	6,628	3.14
Acid orange dyes, total	6,426	6,531	16,712	2.56
Acid Orange 7	148	135	368	2.72
Acid Orange 10	77	113	457	4.05
Acid Orange 24	366	378	1,215	3.21
Acid Orange 156	4,128	3,995	10,546	2.64
All other	1,707	1,910	4,126	2.14
Acid red dyes, total	4,684	4,379	16,285	3.72
Acid Red 1	345	277	1,034	3.73
Acid Red 73	85	66	373	5.65
Acid Red 88	82	65	356	5.51
Acid Red 137	124	154	1,148	7.44
Acid Red 151	237	209	711	3.40
All other	3,811	3,608	12,663	3.51
Acid violet dyes	99	136	842	6.19
Acid blue dyes total	5,984	5,384	35,910	6.67
Acid Blue 40	396	407	1,547	3.80
Acid Blue 145	...	48	548	11.33
Acid Blue 324	1,605	1,137	5,932	5.22
All other	3,983	3,792	27,883	7.35
Acid green dyes	197	199	1,654	8.29
Acid brown dyes, total	728	682	3,313	4.86
Acid Brown 14	...	140	644	4.61
All other	...	542	2,669	4.92
Acid black dyes, total	2,702	2,457	9,514	3.87
Acid Black 1	233	232	862	3.72
Acid Black 52	940	802	2,646	3.30
Acid Black 102	...	238	906	3.80
Acid Black 172	103	...	...	...
All other	1,426	1,185	5,100	4.30
BASIC DYES (CLASSICAL AND MODIFIED)				
Total	12,067	11,253	64,600	5.74
Basic yellow dyes	2,838	2,758	9,760	3.54
Basic orange dyes, total	921	763	4,138	5.42
Basic Orange 2	264	209	610	2.92
All other	657	554	3,528	6.37

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1984--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
BASIC DYES (CLASSICAL AND MODIFIED)--Continued				
Basic red dyes, total	1,357	1,427	6,517	$4.57
Basic Red 12	135	178	1,064	5.97
Basic Red 15	389	399	1,148	2.88
Basic Red 49	...	79	325	4.09
All other	833	771	3,980	4.57
Basic violet dyes, total	3,709	3,188	10,672	3.35
Basic Violet 1	2,263	1,838	4,055	2.21
Basic Violet 3	997	917	3,481	3.80
All other	449	433	3,136	7.23
Basic blue dyes, total	1,967	1,899	21,399	11.27
Basic Blue 3	...	404	1,529	3.78
All other	1,967	1,495	19,870	13.29
All other basic dyes	1,275	1,218	12,114	9.95
DIRECT DYES				
Total	30,446	25,814	75,428	2.92
Direct yellow dyes, total	11,591	9,512	22,818	2.40
Direct Yellow 4	560	581	1,843	3.17
Direct Yellow 127	943	816	2,316	2.84
All other	10,088	8,115	18,659	2.30
Direct orange dyes, total	1,504	1,377	3,617	2.63
Direct Orange 15	582	...	...	1.48
Direct Orange 102	356	390	1,462	3.75
All other	566	987	2,155	2.18
Direct red dyes, total	4,998	4,493	15,781	3.51
Direct Red 24	85	71	438	6.13
Direct Red 72	305	260	1,234	4.74
Direct Red 81	564	561	2,376	4.24
Direct Red 83	-	86	400	4.64
Direct Red 254	789	784	2,125	2.71
All other	3,255	2,731	9,208	3.72
Direct violet and green dyes	397	284	1,131	3.98
Direct blue dyes, total	7,237	5,939	20,910	3.52
Direct Blue 75	334	...	...	...
Direct Blue 80	255	179	689	3.85
Direct Blue 86	...	377	1,564	4.15
Direct Blue 199	582	495	2,197	4.43
Direct Blue 218	809	569	2,193	3.85
All other	5,257	4,319	14,267	3.30
Direct brown dyes	214	220	1,212	5.50
Direct black dyes, total	4,505	3,989	9,959	2.50
Direct Black 22	1,399	1,056	1,504	1.42
Direct Black 80	455	407	1,036	2.55
All other	2,651	2,526	7,419	2.94

See footnotes at end of table

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1984--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
DISPERSE DYES				
Total	29,825	26,241	108,874	$4.15
Disperse yellow dyes	3,105	2,501	10,660	4.26
Disperse orange dyes, total	4,614	4,037	10,923	2.71
Disperse Orange 25 and 25:1	286	351	936	2.67
Disperse Orange 30	1,200	1,925	3,932	2.04
Disperse Orange 37	569	246	585	2.38
Disperse Orange 44 and 44:1	362	358	1,323	3.69
All other	2,197	1,157	4,147	3.59
Disperse red dyes, total	6,685	5,934	30,715	5.18
Disperse Red 1	259	259	879	3.39
Disperse Red 177	797	696	2,767	3.97
Disperse Red 179	274	181	788	4.33
All other	5,355	4,798	26,281	5.48
Disperse violet dyes	328	374	2,536	6.78
Disperse blue dyes, total	12,421	11,434	44,909	3.93
Disperse Blue 79	5,695	5,644	13,129	2.33
All other	6,726	5,790	31,780	5.49
Disperse black, brown and green dyes, total	2,672	1,961	9,131	4.66
Disperse Brown 1	903	762	2,738	3.59
All other	1,769	1,199	6,393	5.34
FIBER-REACTIVE DYES				
Total	7,357	6,904	48,796	7.07
FLUORESCENT BRIGHTENING AGENTS				
Total	57,400	63,305	80,280	1.27
FOOD, DRUG, AND COSMETIC COLORS				
Total	6,760	6,402	65,538	10.24
Food, Drug and Cosmetic Dyes				
Total	6,352	6,019	58,500	9.72
FD&C Red No. 3	311	357	5,202	14.57
FD&C Yellow No. 5	1,775	1,458	8,005	5.49
FD&C Yellow No. 6	1,314	1,203	6,078	5.05
All other drug and cosmetic	2,952	3,001	39,215	13.07

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1984--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
FOOD, DRUG, AND COSMETIC COLORS--Continued				
Drug and Cosmetic External Drug and Cosmetic Dyes				
Total	408	383	7,038	$18.39
D&C Yellow No. 10	52	71	2,353	32.99
D&C Red No. 7	139	...	...	...
D&C Red No. 36	4	4	48	11.91
All other drug and cosmetic and external drug and cosmetic dyes	213	308	4,637	15.04
MORDANT DYES				
Total	288	329	1,749	5.32
SOLVENT DYES				
Total	10,884	7,459	29,722	3.98
Solvent yellow dyes	952	683	4,626	6.78
Solvent orange dyes	980	904	3,530	3.90
Solvent red dyes	2,614	2,137	9,642	4.51
Solvent blue dyes	3,149	848	5,207	6.14
All other solvent dyes	3,189	2,887	6,717	2.33
VAT DYES				
Total	37,612	33,922	86,847	2.56
Vat red dyes	840	466	7,162	15.35
Vat blue dyes	29,749	28,737	54,081	1.88
Vat green dyes	1,977	1,356	4,848	3.57
All other vat dyes	5,046	3,363	20,756	6.17
All other dyes[2]	14,865	14,852	32,771	2.21

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[1] Calculated from unrounded figures.

[2] The data include azoic compositions, azoic coupling components, azoic diazo components (bases and salts), sulfur dyes, and miscellaneous dyes. Statistics for those groups of dyes may not be published separately because publication would disclose information received in confidence.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES	
*ACID YELLOW DYES:	
Acid Yellow 3	ACY.
*Acid Yellow 17	ATL, CGY, CK, SDH.
Acid Yellow 19	ATL, CK.
*Acid Yellow 23	BAS, CK, LVR, MRX, WJ.
Acid Yellow 34	FAB.
Acid Yellow 36	VPC.
Acid Yellow 40	CGY, CK.
*Acid Yellow 49	CK, S(E), VPC.
Acid Yellow 59	BAS.
Acid Yellow 65	ATL.
Acid Yellow 73	SDH.
Acid Yellow 87	CK.
Acid Yellow 99	CGY.
Acid Yellow 119	BAS.
Acid Yellow 127	CK.
Acid Yellow 128	CK.
Acid Yellow 129	CGY, CK.
Acid Yellow 135	ICI.
*Acid Yellow 151	CGY, CK, S(E), VPC.
Acid Yellow 159	CGY, CK.
Acid Yellow 174	FAB.
Acid Yellow 198	CK.
Acid Yellow 199	ICI.
Acid Yellow 200	CK.
Acid Yellow 216	VPC.
Acid Yellow 219	CGY, CK, S(E).
Acid Yellow 239	DGO.
Acid yellow dyes, all other	ATL, CK.
*ACID ORANGE DYES:	
*Acid Orange 7	ATL, BAS, CK, VPC.
Acid Orange 8	ATL, CK.
*Acid Orange 10	ATL, BAS, CGY, CK.
*Acid Orange 24	CGY, CK, S(E).
Acid Orange 51	CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID ORANGE DYES--CONTINUED	
Acid Orange 60	CGY, CK.
Acid Orange 69	ATL, FAB.
Acid Orange 86	CGY.
Acid Orange 89	BAS.
Acid Orange 116	CGY, CK.
Acid Orange 128	CK.
Acid Orange 152	CK.
*Acid Orange 156	CGY, CK, S(E), VPC.
Acid Orange 161	ATL.
Acid orange dyes, all other	CK, VPC.
*ACID RED DYES:	
*Acid Red 1	ATL, BAS, CGY, CK, FAB.
Acid Red 4	ATL, FAB.
Acid Red 14	ATL, BAS.
Acid Red 18	ATL.
Acid Red 57	CGY, CK.
*Acid Red 73	ATL, CK, PSC.
Acid Red 85	FAB.
Acid Red 87	SDH.
*Acid Red 89	ATL, BAS, CGY, FAB.
Acid Red 97	ATL.
Acid Red 114	CGY, CK, VPC.
Acid Red 119	CK.
*Acid Red 137	BAS, CGY, CK, VPC.
Acid Red 151	ATL, CGY, CK.
Acid Red 167	ATL, CGY.
Acid Red 182	VPC.
Acid Red 194	CGY.
Acid Red 213	CGY.
Acid Red 226	BAS.
Acid Red 257	CGY.
Acid Red 266	CK, ICI, VPC.
Acid Red 296	BAS.
Acid Red 299	ATL, CK, VPC.
Acid Red 337	CK, S(E), VPC.
Acid Red 361	CGY, CK.
Acid Red 364	CK.
Acid Red 384	CK.

TABLE 2.--DYES FOR WHICH U.S. PROD CTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED B Y MANUFACTURERS, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID RED DYES--CONTINUED	
Acid Red 392	VPC.
Acid Red 396	ICI.
Acid red dyes, all other	ATL, CGY, CK, EKT.
ACID VIOLET DYES:	
Acid Violet 3	ATL, FAB.
Acid Violet 7	ATL, FAB.
Acid Violet 12	ATL, FAB.
Acid Violet 17	SDH.
Acid Violet 49	SDH.
*ACID BLUE DYES:	
Acid Blue 9	BAS, SDH, WJ.
Acid Blue 15	BAS.
Acid Blue 25	ATL, CGY, CK, ICI, VPC.
Acid Blue 27	ATL.
*Acid Blue 40	CK, S(E), VPC.
Acid Blue 41	CK.
Acid Blue 45	BAS, CGY.
Acid Blue 80	CGY.
Acid Blue 104	ATL, BAS.
Acid Blue 113	CK.
*Acid Blue 145	ATL, CK, VPC.
Acid Blue 158, 158:1, and 158:2	CGY.
Acid Blue 277	ATL, CGY.
Acid Blue 283	S(E).
Acid Blue 288	S(E).
Acid Blue 298	CK.
*Acid Blue 324	CK, S(E), VPC.
Acid Blue 330	ATL.
Acid Blue 336	ICI.
Acid blue dyes, all other	BAS, CGY, CK, X.
ACID GREEN DYES:	
Acid Green 1	LVR.
Acid Green 5	WJ.
Acid Green 20	ATL, FAB.
Acid Green 25	ATL, CGY, CK.
Acid green dyes, all other	CK.
*ACID BROWN DYES:	
*Acid Brown 14	ATL, CGY, CK, S(E).
Acid Brown 45	CGY.
Acid Brown 50	BAS.

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TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID BROWN DYES--CONTINUED	
Acid Brown 97	FAB.
Acid Brown 98	CGY, CK.
Acid Brown 147	CK.
Acid Brown 160	BAS.
Acid Brown 161	BAS.
Acid Brown 165	BAS.
Acid Brown 227	BAS.
Acid Brown 239	CK.
Acid Brown 264	BAS.
Acid brown dyes, all other	BAS, CK.
*ACID BLACK DYES:	
*Acid Black 1	ATL, BAS, CGY, CK.
*Acid Black 52	CGY, CK, FAB, S(E).
Acid Black 60	CGY, CK.
Acid Black 63	BAS.
Acid Black 92	FAB.
*Acid Black 102	X.
Acid Black 107	CGY, CK, VPC.
*Acid Black 172	CGY, ICI, VPC.
Acid Black 194	BAS.
Acid black dyes, all other	CK, VPC.
AZOIC DYES AND COMPONENTS	
AZOIC COMPOSITIONS:	
AZOIC YELLOW COMPOSITIONS:	
Azoic Yellow 1	BUC.
AZOIC ORANGE COMPOSITIONS:	
Azoic Orange 3	BUC.
Azoic orange compositions, all other	BUC.
AZOIC RED COMPOSITIONS:	
Azoic Red 1	BUC.
Azoic Red 2	BUC.
Azoic Red 6	BUC.
Azoic red compositions, all other	ALL, BUC.
AZOIC VIOLET COMPOSITIONS:	
Azoic Violet 1	BUC.
Azoic violet compositions, all other	BUC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED	
AZOIC COMPOSITIONS--CONTINUED	
AZOIC BLUE COMPOSITIONS:	
Azoic Blue 3	BUC.
AZOIC BROWN COMPOSITIONS:	
Azoic Brown 7	BUC.
Azoic Brown 9	BUC.
Azoic brown compositions, all other	BUC.
AZOIC BLACK COMPOSITIONS:	
Azoic Black 4	BUC.
Azoic black compositions, all other	BUC.
AZOIC DIAZO COMPONENTS, BASES:	
Azoic Diazo Component 4, base	ALL.
Azoic Diazo Component 13, base	ALL, BUC.
Azoic Diazo Component 14, base	ALL.
Azoic Diazo Component 32, base	ALL.
Azoic Diazo Component 34, base	ALL.
AZOIC DIAZO COMPONENTS, SALTS:	
Azoic Diazo Component 1, salt	ALL, BUC.
Azoic Diazo Component 3, salt	ALL, BUC.
Azoic Diazo Component 5, salt	ALL, BUC.
Azoic Diazo Component 8, salt	ALL, BUC.
Azoic Diazo Component 9, salt	ALL, BUC.
Azoic Diazo Component 10, salt	ALL, BUC.
Azoic Diazo Component 11, salt	ALL.
Azoic Diazo Component 12, salt	ALL, BUC.
Azoic Diazo Component 13, salt	ALL, BUC.
Azoic Diazo Component 14, salt	ALL.
Azoic Diazo Component 20, salt	ATL.
Azoic Diazo Component 32, salt	ALL, ATL.
Azoic Diazo Component 34, salt	ALL.
Azoic Diazo Component 35, salt	ALL.
Azoic Diazo Component 42, salt	ALL.
Azoic Diazo Component 48, salt	ATL.
Azoic Diazo Component 49, salt	ALL, BUC.
Azoic diazo components, salt, all other	ALL.
AZOIC COUPLING COMPONENTS:	
Azoic Coupling Component 3	PCW.
Azoic Coupling Component 7	PCW.
Azoic Coupling Component 12	PCW.
Azoic Coupling Component 14	PCW.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED	
AZOIC COUPLING COMPONENTS--CONTINUED	
Azoic Coupling Component 20	PCW.
Azoic Coupling Component 21	PCW.
Azoic Coupling Component 29	PCW.
Azoic Coupling Component 34	PCW.
Azoic Coupling Component 43	ALL.
BASIC DYES (CLASSICAL AND MODIFIED)	
BASIC YELLOW DYES:	
Basic Yellow 2	ACY.
Basic Yellow 11	ATL, CK, VPC.
Basic Yellow 13	ATL, VPC.
Basic Yellow 15	CK.
Basic Yellow 21	VPC.
Basic Yellow 25	BAS.
Basic Yellow 28	BAS.
Basic Yellow 29	BAS, VPC.
Basic Yellow 37	ACY.
Basic Yellow 49	BAS.
Basic Yellow 53	CK.
Basic Yellow 58	VPC.
Basic Yellow 65	BAS.
Basic Yellow 78	ACY.
Basic Yellow 79	BAS, CK.
Basic Yellow 81	BAS.
Basic Yellow 83	CK.
Basic Yellow 96	BAS.
Basic yellow dyes, all other	BAS, VPC, X.
Basic yellow dyes, all other, modified	CGY, CK.
*BASIC ORANGE DYES:	
Basic Orange 1	BAS, PSC.
*Basic Orange 2	ATL, BAS, CGY, CK, PSC.
Basic Orange 21	ATL, VPC.
Basic orange dyes, all other	VPC, X.
*BASIC RED DYES:	
*Basic Red 12	ACY, ATL, VPC.
Basic Red 14	BAS, VPC.
*Basic Red 15	ATL, BAS, CK.

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TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES (CLASSICAL AND MODIFIED)--CONTINUED	
*BASIC RED--CONTINUED	
Basic Red 17	CK.
Basic Red 18	ATL, VPC.
Basic Red 22	CGY.
Basic Red 23	VPC.
Basic Red 29	BAS.
Basic Red 46	CGY.
*Basic Red 49	BAS, CGY, CK, VPC.
Basic Red 51	BAS.
Basic Red 54	BAS.
Basic Red 73	CK.
Basic Red 104	CK.
Basic red dyes, all other	X.
Basic red dyes, all other, modified	CK.
*BASIC VIOLET DYES:	
*Basic Violet 1	ACY, BAS, BCC, DSC.
*Basic Violet 3	ACY, BAS, CK, DSC.
Basic Violet 4	DSC.
Basic Violet 10	ACY, BAS.
Basic Violet 16	BAS, VPC.
Basic Violet 35	BAS.
*BASIC BLUE DYES:	
Basic Blue 1	SHC, VPC.
Basic Blue 2	DSC.
*Basic Blue 3	BAS, CGY, CK, VPC.
Basic Blue 6	BAS.
Basic Blue 7	DSC, SDH.
Basic Blue 21	CK.
Basic Blue 26	DSC.
Basic Blue 41	BAS, CGY, VPC.
Basic Blue 54	BAS.
Basic Blue 60	BAS.
Basic Blue 77	CK.
Basic Blue 94 and 94:1	CK.
Basic Blue 140	VPC.
Basic blue dyes, all other	VPC, X.
Basic blue dyes, all other, modified	CK.
BASIC GREEN DYES:	
Basic Green 1	DSC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES (CLASSICAL AND MODIFIED)--CONTINUED	
BASIC GREEN--CONTINUED	
Basic Green 4	ACY, BAS, DSC.
Basic green dyes, all other	X.
BASIC BROWN DYES:	
Basic Brown 1	CGY, PSC.
Basic Brown 4	CGY, PSC.
Basic Brown 94:1	CK.
Basic brown dyes, all other	BAS.
BASIC BLACK DYES:	
Basic black dyes, all other	VPC, X.
Basic black dyes, all other, modified	BAS.
DIRECT DYES	
*DIRECT YELLOW DYES:	
*Direct Yellow 4	ATL, BAS, CGY, CK, VPC.
Direct Yellow 5	ACY, BAS.
Direct Yellow 6	BAS, VPC.
Direct Yellow 11	BAS, VPC.
Direct Yellow 12	ATL, CK.
Direct Yellow 28	ATL, CK.
Direct Yellow 34	CK, S(E).
Direct Yellow 39	CK.
Direct Yellow 44	CGY, CK.
Direct Yellow 51	FAB.
Direct Yellow 84	BAS.
Direct Yellow 103	ATL.
Direct Yellow 106	CGY, CK.
Direct Yellow 107	CGY, CK.
Direct Yellow 118	CGY, CK.
Direct Yellow 119	VPC.
*Direct Yellow 127	BAS, CGY, CK, VPC.
Direct Yellow 131	VPC.
Direct Yellow 132	S(E).
Direct Yellow 137	VPC.
Direct Yellow 147	BAS, VPC.
Direct Yellow 148	S(E).
Direct Yellow 150	S(E).
Direct yellow dyes, all other	ATL, BAS, CK.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT ORANGE DYES:	
Direct Orange 6	ATL.
*Direct Orange 15	BAS, CGY, VPC.
Direct Orange 26	CK.
Direct Orange 29	CGY.
Direct Orange 34	ATL, CK, FAB.
Direct Orange 39	CK, FAB.
Direct Orange 61	CK.
Direct Orange 72	CK, FAB.
Direct Orange 80	ATL.
*Direct Orange 102	BAS, CGY, FAB, VPC.
Direct Orange 105	CK.
Direct Orange 118	CGY, S(E).
Direct orange dyes, all other	BAS, CK.
*DIRECT RED DYES:	
Direct Red 2	ATL, FAB.
Direct Red 9	CK.
Direct Red 16	ATL, CGY, CK.
Direct Red 23	ATL, BAS, CK.
*Direct Red 24	ATL, CGY, CK, FAB.
Direct Red 26	ATL.
Direct Red 28	FAB.
Direct Red 31	ATL.
Direct Red 39	ATL, CK.
*Direct Red 72	ATL, BAS, CGY, CK.
Direct Red 73	ATL.
*Direct Red 80	ATL, CGY, CK.
*Direct Red 81	ATL, CGY, CK, FAB, LVR, VPC.
*Direct Red 83	ATL, CGY, CK, FAB.
Direct Red 89	CK.
Direct Red 153	ATL.
Direct Red 236	BAS, VPC.
Direct Red 238	VPC.
Direct Red 239	CGY, S(E).
*Direct Red 254	BAS, VPC.
Direct red dyes, all other	ACY, ATL, BAS, CK.
DIRECT VIOLET DYES:	
Direct Violet 9	CGY.
Direct Violet 66	ATL.
Direct Violet 99	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT BLUE DYES:	
Direct Blue 1	ATL.
Direct Blue 2	FAB.
Direct Blue 8	ATL.
Direct Blue 15	ATL, S(E), VPC.
Direct Blue 25	CK.
Direct Blue 71	CK.
*Direct Blue 75	CGY, CK, S(E).
Direct Blue 76	BAS, CK.
*Direct Blue 80	ATL, CGY, CK, FAB.
*Direct Blue 86	ATL, BAS, CGY, CK, VPC.
Direct Blue 91	CGY.
Direct Blue 98	ATL, CK, FAB.
Direct Blue 100	CK, FAB.
Direct Blue 108	ATL.
Direct Blue 120, 120:1, 120:2, and 120:3	FAB.
Direct Blue 160	CGY, CK.
Direct Blue 189	CGY.
Direct Blue 191	CK.
*Direct Blue 199	BAS, CGY, VPC.
*Direct Blue 218	CGY, CK, FAB, S(E), VPC.
*Direct Blue 262	S(E).
Direct Blue 267	S(E).
Direct Blue 269	VPC.
Direct Blue 279	VPC.
Direct Blue 280	ATL.
Direct Blue 283	ATL.
Direct Blue 285	ATL.
Direct Blue 286	ATL.
Direct blue dyes, all other	ATL, BAS, CGY, CK, FAB, VPC.
DIRECT GREEN DYES:	
Direct Green 1	FAB.
Direct Green 6	FAB.
Direct Green 92	ATL.
Direct green dyes, all other	CK, FAB.
DIRECT BROWN DYES:	
Direct Brown 2	FAB.
Direct Brown 6	FAB.
Direct Brown 31	FAB.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
DIRECT BROWN DYES--CONTINUED	
Direct Brown 44	FAB.
Direct Brown 74	FAB.
Direct Brown 95	CK.
Direct Brown 154	FAB.
Direct Brown 229	ATL.
Direct Brown 230	ATL.
Direct Brown 231	ATL.
Direct Brown 232	ATL.
Direct Brown 238	ATL.
Direct brown dyes, all other	CK, FAB.
*DIRECT BLACK DYES:	
Direct Black 4	FAB.
Direct Black 19	CGY.
*Direct Black 22	ATL, CGY, CK, VPC.
*Direct Black 80	ATL, CK, FAB.
Direct Black 165	ATL.
Direct Black 170	ATL.
Direct black dyes, all other	ATL, CK, FAB, VPC.
DISPERSE DYES	
DISPERSE YELLOW DYES:	
Disperse Yellow 3	CGY, CK.
Disperse Yellow 23	CGY, CK, S(E).
Disperse Yellow 34	EKT.
Disperse Yellow 42	CGY, SDC.
Disperse Yellow 54	BAS, CGY, VPC.
Disperse Yellow 58	VPC.
Disperse Yellow 64	BAS, CGY.
Disperse Yellow 67	CGY.
Disperse Yellow 77	VPC.
Disperse Yellow 86	EKT.
Disperse Yellow 88	EKT.
Disperse Yellow 99	EKT.
Disperse Yellow 108	EKT.
Disperse Yellow 114	CK, EKT.
Disperse Yellow 125	HST.
Disperse Yellow 126	ICI.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
DISPERSE YELLOW DYES--CONTINUED	
Disperse Yellow 198	BAS.
Disperse Yellow 200	EKT.
Disperse Yellow 210	S(E).
Disperse Yellow 219	SDC.
Disperse yellow dyes, all other	BAS, CK, EKT, HST, ICI.
*DISPERSE ORANGE DYES:	
Disperse Orange 3	ATL, CK.
Disperse Orange 5	ATL.
Disperse Orange 17	ATL.
*Disperse Orange 25 and 25:1	ATL, CGY, CK, EKT, ICI, VPC.
Disperse Orange 29	ATL, CK, S(E), SDC.
*Disperse Orange 30	BUC, CGY, S(E), VPC.
*Disperse Orange 37	ATL, CK, EKT.
Disperse Orange 41	CGY, S(E).
*Disperse Orange 44 and 44:1	CGY, CK, S(E), SDC.
Disperse Orange 55	BAS.
Disperse Orange 73	BAS.
Disperse Orange 79	CGY.
Disperse Orange 88	SDC.
Disperse Orange 89	CK.
Disperse Orange 94	SDC.
Disperse Orange 129	SDC.
Disperse Orange 136	EKT.
Disperse Orange 138	EKT.
Disperse Orange 145	EKT.
Disperse orange dyes, all other	CK.
*DISPERSE RED DYES:	
*Disperse Red 1	ATL, CGY, CK, EKT.
Disperse Red 5	ATL, CGY, CK.
Disperse Red 13	ATL, BAS.
Disperse Red 15	CGY.
Disperse Red 17	ATL, CGY, CK.
Disperse Red 30	CGY, EKT.
Disperse Red 35	EKT.
Disperse Red 50	CGY, CK.
Disperse Red 55	BAS, CGY, CK, VPC.
Disperse Red 60	BAS, CGY, VPC.
Disperse Red 65	CK, EKT.

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TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE RED DYES--CONTINUED	
Disperse Red 73	CK, FAB, ICI, S(E).
Disperse Red 74	S(E).
Disperse Red 82	CGY, VPC.
Disperse Red 86	CGY.
Disperse Red 88	EKT.
Disperse Red 90	VPC.
Disperse Red 91	BAS.
Disperse Red 108	VPC.
Disperse Red 117	EKT.
Disperse Red 118	BAS.
Disperse Red 128	CGY.
Disperse Red 133	VPC.
Disperse Red 135	CGY, CK.
Disperse Red 136	EKT.
Disperse Red 137	EKT.
Disperse Red 153	FAB, SDC.
Disperse Red 159	VPC.
Disperse Red 167 and 167:1	BAS, CGY, CK, S(E).
*Disperse Red 177	BUC, CK, ICI, S(E), SDC, VPC.
*Disperse Red 179	BAS, CGY, CK, S(E).
Disperse Red 184	HST.
Disperse Red 194	CK.
Disperse Red 195	SDC.
Disperse Red 263	BAS, SDC.
Disperse Red 273	SDC.
Disperse Red 274	SDC.
Disperse Red 278	ICI.
Disperse Red 305	EKT.
Disperse Red 307	EKT.
Disperse Red 309	EKT.
Disperse Red 311	ICI.
Disperse Red 313	SDC.
Disperse Red 316	SDC.
Disperse Red 319	CK.
Disperse Red 325	CGY, CK.
Disperse Red 333	SDC.
Disperse Red 338	EKT.
Disperse Red 339	EKT.

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TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE RED DYES--CONTINUED	
Disperse Red 340	EKT.
Disperse Red 341	EKT.
Disperse Red 719	CK.
Disperse red dyes, all other	BAS, BUC, CK, EKT.
DISPERSE VIOLET DYES:	
Disperse Violet 1	CK.
Disperse Violet 17	VPC.
Disperse Violet 26	VPC.
Disperse Violet 28	CGY, CK, VPC.
Disperse Violet 33	ICI, SDC.
Disperse Violet 36	SDC.
Disperse Violet 40	VPC.
Disperse Violet 48	HST.
Disperse Violet 60	SDC.
Disperse Violet 81	SDC.
Disperse Violet 91	CK.
*DISPERSE BLUE DYES:	
Disperse Blue 3	CGY, CK, EKT, FAB.
Disperse Blue 27	EKT.
Disperse Blue 55	CGY.
Disperse Blue 56	CK, VPC.
Disperse Blue 60	BAS, CGY, VPC.
Disperse Blue 62	EKT.
Disperse Blue 64	CGY, EKT.
Disperse Blue 72	BAS.
Disperse Blue 73	S(E).
Disperse Blue 77	EKT.
*Disperse Blue 79	ATL, BAS, BUC, CGY, EKT, HST, ICI, S(E), VPC.
Disperse Blue 81	VPC.
Disperse Blue 95	HST.
Disperse Blue 102	CK, EKT.
Disperse Blue 112	EKT.
Disperse Blue 118	EKT.
Disperse Blue 122	ICI.
Disperse Blue 148	BAS.
Disperse Blue 165	CGY, HST, VPC.
Disperse Blue 177	SDC.
Disperse Blue 183	S(E).

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE BLUE DYES--CONTINUED	
Disperse Blue 200	ICI.
Disperse Blue 281	CGY, SDC.
Disperse Blue 284	ICI.
Disperse Blue 291	SDC.
Disperse Blue 333	HST.
Disperse Blue 337	EKT.
Disperse Blue 338	EKT.
Disperse blue dyes, all other	BAS, BUC, CK, EKT, HST, ICI, SDC.
DISPERSE GREEN DYES:	
Disperse Green 9	ICI.
Disperse green dyes, all other	CK.
*DISPERSE BROWN DYES:	
*Disperse Brown 1	ATL, BUC, CGY, CK, HST, ICI, SDC.
Disperse Brown 2	SDC.
Disperse Brown 10	SDC.
Disperse Brown 18	SDC.
Disperse Brown 22	EKT.
Disperse brown dyes, all other	CK, EKT, ICI.
DISPERSE BLACK DYES:	
Disperse Black 9	ATL, CGY, EKT.
Disperse Black 33	CGY.
Disperse black dyes, all other	BAS, CK, VPC.
FIBER-REACTIVE DYES	
REACTIVE YELLOW DYES:	
Reactive Yellow 7	ICI.
Reactive Yellow 15	HST.
Reactive Yellow 17	HST.
Reactive Yellow 18	ICI.
Reactive Yellow 22	ICI.
Reactive Yellow 37	HST.
Reactive Yellow 42	HST.
Reactive Yellow 57	HST.
Reactive Yellow 86	ICI.
Reactive Yellow 133	ICI.
Reactive Yellow 135	ICI.
Reactive yellow dyes, all other	HST, ICI.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER-REACTIVE DYES--CONTINUED	
REACTIVE ORANGE DYES:	
Reactive Orange 1	FAB, ICI.
Reactive Orange 4	ICI.
Reactive Orange 12	ICI.
Reactive Orange 13	ICI.
Reactive Orange 14	ICI.
Reactive Orange 16	HST.
Reactive Orange 20	CK.
Reactive Orange 70	CGY.
Reactive Orange 78	HST.
Reactive Orange 84	ICI.
Reactive Orange 86	ICI.
Reactive orange dyes, all other	HST.
REACTIVE RED DYES:	
Reactive Red 2	CK, ICI.
Reactive Red 11	CK, ICI.
Reactive Red 29	ICI.
Reactive Red 31	ICI.
Reactive Red 33	ICI.
Reactive Red 43	CK.
Reactive Red 49	HST.
Reactive Red 94	HST.
Reactive Red 105	HST.
Reactive Red 106	HST.
Reactive Red 108	HST.
Reactive Red 120	CGY, CK, ICI.
Reactive Red 141	ICI.
Reactive Red 180	HST.
Reactive red dyes, all other	CK, ICI, VPC.
REACTIVE VIOLET DYES:	
Reactive Violet 5	HST.
Reactive violet dyes, all other	HST.
REACTIVE BLUE DYES:	
Reactive Blue 3	ICI.
Reactive Blue 4	ICI.
Reactive Blue 5	ICI.
Reactive Blue 7	CGY.
Reactive Blue 13	ICI.
Reactive Blue 19	HST.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER-REACTIVE DYES--CONTINUED	
REACTIVE BLUE DYES--CONTINUED	
Reactive Blue 21	HST.
Reactive Blue 38	HST.
Reactive Blue 71	ICI.
Reactive Blue 89	HST, ICI.
Reactive Blue 137	CGY.
Reactive Blue 173	ICI.
Reactive Blue 174	ICI.
Reactive Blue 199	ICI.
Reactive blue dyes, all other	CK, HST, ICI, VPC.
REACTIVE GREEN DYES:	
Reactive Green 19	ICI.
Reactive green dyes, all other	HST.
REACTIVE BROWN DYES:	
Reactive Brown 1	ICI.
Reactive Brown 17	ICI.
Reactive Brown 18	HST.
REACTIVE BLACK DYES:	
Reactive Black 5	HST.
Reactive Black 9	ICI.
Reactive black dyes, all other	HST.
FLUORESCENT BRIGHTENERS	
Fluorescent Brightener 22	CGY.
Fluorescent Brightener 24	CGY.
Fluorescent Brightener 28	CGY, SDH.
Fluorescent Brightener 49	CGY, S(E).
Fluorescent Brightener 52	S(E).
Fluorescent Brightener 61	ACY, CCW.
Fluorescent Brightener 71	CGY.
Fluorescent Brightener 102	CGY.
Fluorescent Brightener 126	SDH.
Fluorescent Brightener 128	SDH.
Fluorescent Brightener 134	CGY.
Fluorescent Brightener 191	VPC.
Fluorescent Brightener 200	VPC.
Fluorescent brighteners, all other	ACY, BAS, CGY, CK, S(E), VPC, X.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FOOD, DRUG, AND COSMETIC COLORS	
*FOOD, DRUG, AND COSMETIC DYES:	
Food, Drug, and Cosmetic Blue 1	KON, SDH, WJ.
Food, Drug, and Cosmetic Blue 2	KON, SDH, WJ.
Food, Drug, and Cosmetic Green 3	KON, WJ.
Food, Drug, and Cosmetic Red 2	WJ.
*Food, Drug, and Cosmetic Red 3	KON, SDH, STG, WJ.
Food, Drug, and Cosmetic Red 4	CK, WJ.
Food, Drug, and Cosmetic Red 40	KON, SDH, WJ.
*Food, Drug, and Cosmetic Yellow 5	CK, KON, MRX, STG, WJ.
*Food, Drug, and Cosmetic Yellow 6	CK, KON, STG, WJ.
*DRUG AND COSMETIC DYES:	
Drug and Cosmetic Green 5	KON.
Drug and Cosmetic Green 6	KON.
Drug and Cosmetic Green 8	SDH.
Drug and Cosmetic Orange 4	KON.
Drug and Cosmetic Orange 5	SDH, SWA.
Drug and Cosmetic Orange 17	SWA.
Drug and Cosmetic Red 3	KON.
Drug and Cosmetic Red 6	KON, MRX, SDH, SWA.
*Drug and Cosmetic Red 7	KON, MRX, SDH, SWA.
Drug and Cosmetic Red 8	KON, SWA.
Drug and Cosmetic Red 9	KON, MRX, SWA.
Drug and Cosmetic Red 17	KON.
Drug and Cosmetic Red 19	KON, SWA.
Drug and Cosmetic Red 21	SWA.
Drug and Cosmetic Red 22	SDH.
Drug and Cosmetic Red 27	SDH.
Drug and Cosmetic Red 28	SDH.
Drug and Cosmetic Red 30	KON.
Drug and Cosmetic Red 33	CK, KON.
Drug and Cosmetic Red 34	KON, SWA.
*Drug and Cosmetic Red 36	KON, SDH, SWA.
Drug and Cosmetic Yellow 5	KON.
Drug and Cosmetic Yellow 6	KON.
Drug and Cosmetic Yellow 8	KON, SDH.
Drug and Cosmetic Yellow 10	CK, KON, SDH, WJ.
Drug and Cosmetic Yellow 11	KON.

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TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FOOD, DRUG, AND COSMETIC COLORS--CONTINUED	
DRUG AND COSMETIC DYES, EXTERNAL:	
External Drug and Cosmetic Orange 3	CK, KON.
External Drug and Cosmetic Yellow 7	KON.
MORDANT DYES	
MORDANT YELLOW DYES:	
Mordant Yellow 8	FAB.
Mordant Yellow 16	FAB.
Mordant Yellow 20	FAB.
MORDANT ORANGE DYES:	
Mordant Orange 1	FAB.
Mordant Orange 6	ATL, FAB.
Mordant Orange 8	FAB.
Mordant orange dyes, all other	FAB.
MORDANT RED DYES:	
Mordant Red 7	ATL.
Mordant Red 11	SDH, VPC.
MORDANT BROWN DYES:	
Mordant Brown 1	ATL, FAB.
Mordant Brown 18	FAB.
Mordant Brown 40	FAB.
Mordant Brown 70	FAB.
MORDANT BLACK DYES:	
Mordant Black 9	ATL.
Mordant Black 11	CGY.
SOLVENT DYES	
SOLVENT YELLOW DYES:	
Solvent Yellow 3	PSC.
Solvent Yellow 13	BAS.
Solvent Yellow 14	ATL, PSC.
Solvent Yellow 16	PSC.
Solvent Yellow 30	ACY.
Solvent Yellow 33	ACY, CIC.
Solvent Yellow 40	CK.
Solvent Yellow 42	ATL, CK.
Solvent Yellow 43	DGO.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT YELLOW DYES--CONTINUED	
Solvent Yellow 44	DGO.
Solvent Yellow 56	PSC.
Solvent Yellow 72	PSC.
Solvent Yellow 88	CK.
Solvent Yellow 94	SDH.
Solvent Yellow 107	MRT.
Solvent Yellow 131	DGO.
Solvent Yellow 135	X.
Solvent Yellow 143	MRT.
Solvent Yellow 160	X.
Solvent Yellow 161	MRT.
Solvent Yellow 163	MRT.
Solvent yellow dyes, all other	CIC, DGO, MIL.
SOLVENT ORANGE DYES:	
Solvent Orange 2	PSC.
Solvent Orange 3	ATL, PSC.
Solvent Orange 7	ATL, PSC.
Solvent Orange 20	BAS.
Solvent Orange 23	ATL, CK.
Solvent Orange 25	MRT.
Solvent Orange 31	PSC.
Solvent Orange 60	CIC.
Solvent Orange 73	MRT.
Solvent Orange 74	MRT.
Solvent Orange 75	MRT.
Solvent Orange 76	MRT.
Solvent Orange 77	MRT.
Solvent orange dyes, all other	MRT, PSC.
SOLVENT RED DYES:	
Solvent Red 1	PSC.
Solvent Red 5	ATL.
Solvent Red 23	PSC.
Solvent Red 24	ATL, PSC.
Solvent Red 26	PSC.
Solvent Red 27	PSC.
Solvent Red 42	SDH.
Solvent Red 49	ACY.
Solvent Red 68	ATL, CK, MRT.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT RED DYES--CONTINUED	
Solvent Red 74	ATL.
Solvent Red 125	CK.
Solvent Red 164	MRT.
Solvent Red 165	MRT.
Solvent Red 166	MRT.
Solvent Red 168	MRT.
Solvent Red 169	MRT.
Solvent Red 172	MRT.
Solvent Red 174	MRT.
Solvent Red 175	MRT.
Solvent Red 207	MRT.
Solvent Red 208	MRT.
Solvent Red 209	MRT.
Solvent Red 210	MRT.
Solvent red dyes, all other	CIC, CK, MIL, MRT.
SOLVENT VIOLET DYES:	
Solvent Violet 8	DSC.
Solvent Violet 9	DSC.
Solvent Violet 13	CK, MRT.
Solvent Violet 14	MRT.
Solvent Violet 38	MRT.
SOLVENT BLUE DYES:	
Solvent Blue 3	SW.
Solvent Blue 4	DSC.
Solvent Blue 5	DSC.
Solvent Blue 23	BAS.
Solvent Blue 35	MRT.
Solvent Blue 36	MRT.
Solvent Blue 38	SDH, TMI.
Solvent Blue 43	ATL.
Solvent Blue 56	VPC.
Solvent Blue 58	MRT.
Solvent Blue 59	VPC.
Solvent Blue 98	MRT.
Solvent Blue 99	MRT.
Solvent Blue 100	MRT.
Solvent Blue 101	MRT.
Solvent Blue 102	MRT.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT BLUE DYES--CONTINUED	
Solvent Blue 128	MRT.
Solvent Blue 129	MRT.
Solvent blue dyes, all other	CK, MIL.
SOLVENT GREEN DYES:	
Solvent Green 1	DSC.
Solvent Green 3	CGY, MRT.
SOLVENT BROWN DYES:	
Solvent Brown 12	PSC.
Solvent Brown 20	ATL.
Solvent Brown 22	PSC.
Solvent Brown 38	FAB.
Solvent Brown 51	MRT.
Solvent Brown 52	MRT.
SOLVENT BLACK DYES:	
Solvent Black 7	OCC, PSC.
Solvent Black 26	ATL, FAB.
Solvent Black 46	MRT.
Solvent Black 48	MRT.
Solvent Black 49	MRT.
Solvent black dyes, all other	PSC.
SULFUR DYES	
SULFUR YELLOW DYES:	
Leuco Sulfur Yellow 1	SDC.
Leuco Sulfur Yellow 17	SDC.
Leuco Sulfur Yellow 21	SDC.
Leuco Sulfur Yellow 22	SDC.
SULFUR ORANGE DYES:	
Leuco Sulfur Orange 1	SDC.
SULFUR RED DYES:	
Leuco Sulfur Red 10	SDC.
Leuco Sulfur Red 14	SDC.
SULFUR BLUE DYES:	
Leuco Sulfur Blue 7	SDC.
Leuco Sulfur Blue 13	SDC.
SULFUR GREEN DYES:	
Leuco Sulfur Green 2	SDC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SULFUR DYES--CONTINUED	
SULFUR GREEN DYES--CONTINUED	
Leuco Sulfur Green 3	SDC.
Leuco Sulfur Green 16	SDC.
Leuco Sulfur Green 34	SDC.
Leuco Sulfur Green 35	SDC.
Leuco Sulfur Green 36	SDC.
SULFUR BROWN DYES:	
Leuco Sulfur Brown 1, 1:1	SDC.
Leuco Sulfur Brown 3	SDC.
Leuco Sulfur Brown 10	SDC.
Leuco Sulfur Brown 31	SDC.
Leuco Sulfur Brown 37	SDC.
Leuco Sulfur Brown 52	SDC.
Leuco Sulfur Brown 96	SDC.
Leuco Sulfur Brown 95	SDC.
Sulfur Brown 96	SDC.
Sulfur brown dyes, all other	SDC.
SULFUR BLACK DYES:	
Leuco Sulfur Black 1	SDC.
Leuco Sulfur Black 2	SDC.
Leuco Sulfur Black 11, 11:1	SDC.
Leuco Sulfur Black 18	SDC.
Solubilized Sulfur Black 1	SDC.
Sulfur Black 1	SDC.
Sulfur Black 2	SDC.
Sulfur Black 11, 11:1	SDC.
VAT DYES	
VAT YELLOW DYES:	
Vat Yellow 2, 8-1/2%	CGY, VPC.
Vat Yellow 22, 10%	VPC.
Vat Yellow 33, 15%	CGY.
Vat Yellow 51	SDC.
VAT ORANGE DYES:	
Vat Orange 1, 20%	CGY, VPC.
Vat Orange 2, 12%	BAS, CGY.
Vat Orange 7, 11%	HST.
Vat Orange 9, 12%	CGY.
Vat Orange 15, 10%	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
VAT DYES--CONTINUED	
VAT RED DYES:	
Vat Red 10, 18%	BAS.
Vat Red 13, 11%	CGY.
Vat Red 14, 10%	HST.
Vat Red 15, 10%	CGY, HST.
Vat Red 29, 18%	SDC.
Vat Red 32, 20%	BAS, VPC.
VAT VIOLET DYES:	
Vat Violet 1, 11%	CGY, VPC.
Vat Violet 3, 15%	HST.
Vat Violet 13, 6-1/4%	BAS, CGY.
Vat Violet 21	VPC.
VAT BLUE DYES:	
Vat Blue 1, 20%	BAS, BCC.
Vat Blue 6, 8-1/3%	BAS, CGY.
Vat Blue 16, 16%	BAS, CGY.
Vat Blue 18, 13%	CGY.
Vat Blue 19	BAS.
Vat Blue 20, 14%	CGY.
Vat Blue 29	BAS.
Vat Blue 43	SDC.
Vat Blue 66	BAS.
Vat Blue 74	SDC.
VAT GREEN DYES:	
Vat Green 1, 6%	CGY.
Vat Green 3, 10%	BAS, CGY.
Vat Green 7	SDC.
Vat Green 9, 12-1/2%	CGY.
Vat Green 32	VPC.
Vat green dyes, all other	CK, HST.
VAT BROWN DYES:	
Vat Brown 1, 11%	CGY, VPC.
Vat Brown 3, 11%	CGY, VPC.
Vat Brown 11, 12%	CGY.
Vat Brown 13, 17%	CGY.
Vat Brown 57, 12.8%	CGY, HST.
Vat brown dyes, all other	VPC.
VAT BLACK DYES:	
Vat Black 16	CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
VAT DYES--CONTINUED	
VAT BLACK DYES--CONTINUED	
Vat Black 22, 19%	CGY.
Vat Black 25, 12-1/2%	BAS, CGY.
Vat Black 63	SDC.
Vat Black 64	SDC.
Vat black dyes, all other	SDC.
MISCELLANEOUS DYES	
All other dyes	ALL, CGY.

TABLE 3.--DYES: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of dyes to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ACY	American Cyanamid Co.
ALL	Alliance Chemical, Inc.
ATL	Atlantic Industries, Inc.
BAS	BASF Wyandotte Corp.
BCC	Buffalo Color Corp.
BUC	Synalloy Corp., Blackman Uhler Chemical Div.
CGY	Ciba-Geigy Corp.
CIC	Color Chem International Corp.
CK	Crompton & Knowles Corp.
DGO	Day-Glo Color Corp.
DSC	Dye Specialties, Inc.
EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.
FAB	Fabricolor Manufacturing Corp.
HST	American Hoechst Corp., Specialty Products Group, Rhode Island Works
ICI	ICI Americas, Inc., Chemical Div.
KON	H. Kohnstamm & Co., Inc.
LVR	C. Lever Co., Inc.
MCA	Johnson Mattney, Inc., Pigments Dept.
MIL	Milliken & Co., Milliken Chemical Co.
MRT	Morton-Thiokol, Inc., Morton Chemical Div.
OCC	Orient Chemical Corp.
PCW	Pfister Chemical, Inc.
PSC	Passaic Color & Chemical Co.
S	Sandoz, Inc., Colors & Chemicals Div.
SDC	Sandoz Chemical Corp.
SDH	Sterling Drug, Inc., Hilton Davis Chemical Co.
SNA	Sun Chemical Corp., Pigment Div.
STG	McCormick & Co., Inc., McCormick/Stange Flavor Div.
SW	Sherwin-Williams Co., Chemical Div.
TMS	Sterling Drug, Inc., Hilton Davis Chemical Co.
TNI	Gillette Co., Chemical Div.
VPC	Mobay Chemical Corp., Dyes & Pigments Div.
WJ	Warner-Jenkinson Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SECTION V -- ORGANIC PIGMENTS

STATISTICAL HIGHLIGHTS

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202-523-0496

Organic pigments are toners and lakes[1] derived in whole or in part from benzenoid chemicals and colors.

Statistics on production and sales of all organic pigments in 1984 are given in table 1.[2] Individual toners and lakes are identified in this report by the names used in the third edition of the *Colour Index*.

Total production of organic pigments in 1984 was 85.7 million pounds-- 9.8 percent more than the 78.0 million pounds produced in 1983. Total sales of organic pigments in 1984 amounted to 76.2 million pounds, valued at $493 million, compared with 69.3 million pounds, valued at $422 million, in 1983. In terms of quantity, sales of organic pigments in 1984 were 98 percent higher than in 1983; in terms of value, sales in 1984 were 16.7 percent higher than in 1983.

Production of toners in 1984 amounted to 84.9 million pounds-- 9.8 percent more than the 77.3 million pounds reported in 1983. Sales in 1984 were 75.5 million pounds, valued at $489 million, compared with 68.8 million pounds valued at $420 million, in 1983. Sales in 1984 were 9.8 percent higher than those in 1983 in terms of quantity, and 16.4 percent higher in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1984 were Pigment Yellow 12, 15.5 million pounds; Pigment Blue 15.3, beta form, 8.0 million pounds; Pigment Red 49:1 barium toner, 6.2 million pounds; Pigment Red 57:1 calcium toner, 9.0 million pounds; Pigment Red 53:1, barium toner, 4.9 million pounds; and Pigment Yellow 14, 4.2 million pounds.

Production of lakes totaled 782,000 pounds in 1984, 13 percent higher than the 692,000 pounds reported for 1983. Sales of lakes in 1984 amounted to 609,000 pounds, valued at $4.3 million. In terms of quantity, sales of lakes in 1984 were 21.3 percent higher than in 1983; in terms of value, sales in 1984 were 57.5 percent higher than in 1983.

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[1] Toners and lakes are essentially the same in their final form; they differ in the method of preparation. A lake is an organic pigment produced by the interaction of a soluble dye, a precipitant, and an absorptive inorganic substrate. A toner is an insoluble dye produced as a powder; some toners are extended by the inclusion of a solid diluent.

[2] See also table 2 which lists these products and identifies the manufacturers by codes. The codes are listed in table 3.

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TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1984

[Listed below are the organic pigments for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all organic pigments for which data on production and/or sales were reported and identifies the manufacturers of each]

ORGANIC PIGMENT	PRODUCTION	SALES		
		QUANTITY	VALUE[1]	UNIT VALUE[2]
	1,000 pounds dry basis[3]	*1,000 pounds dry basis*[3]	*1,000 dollars*	*Per pound*
Grand Total	85,664	76,154	492,954	$6.47
TONERS				
Total	84,882	75,545	488,647	6.47
Yellow toners, total	24,419	19,903	105,211	5.29
Acetoacetarylide yellows:				
Pigment Yellow 1, C.I. 11 680	105	143	850	5.93
Pigment Yellow 3, C.I. 11 710	200	162	815	5.03
Pigment Yellow 74, C.I. 11 741	719	854	6,569	7.69
Diarylide yellows:				
Pigment Yellow 12, C.I. 21 090	15,493	12,015	56,884	4.73
Pigment Yellow 13, C.I. 21 100	443	390	2,437	6.25
Pigment Yellow 14, C.I. 21 095	4,229	3,438	14,410	4.19
Pigment Yellow 17, C.I. 21 105	610	573	3,459	6.03
Pigment Yellow 83, C.I. 21 108	1,054	866	7,862	9.07
All other	1,566	1,462	11,925	8.08
Orange toners, total	2,796	2,515	16,046	6.38
Pigment Orange 5, C.I. 21 075	888	853	4,032	4.73
Pigment Orange 13, C.I. 21 110	151	148	1,445	9.76
Pigment Orange 16, C.I. 21 160	760	633	3,865	6.10
All other	997	881	6,704	5.72
Red toners, total	29,796	26,880	169,630	6.31
Naphthol reds, total	2,009	1,804	12,610	6.99
Pigment Red 5, C.I. 12 490	59	53	666	12.51
Pigment Red 17, C.I. 12 390	48	27	286	10.44
Pigment Red 23, C.I. 12 355	105	112	1,413	12.57
All other naphthol reds	1,797	1,612	10,245	6.95
Pigment Red 3, C.I. 12 120	970	922	5,255	5.70
Pigment Red 4, C.I. 12 085	177	136	694	5.10
Pigment Red 38, C.I. 12 120	156	157	1,809	11.49
Pigment Red 48:1 barium toner, C.I. 15 865	456	489	3,060	6.25
Pigment Red 48:2, calcium toner, C.I. 15 865	1,101	1,253	7,828	6.24
Pigment Red 48:4, manganese toner C.I. 15 865	76	139	1,089	7.84
Pigment Red 49:1 barium toner, C.I. 15 630	6,164	4,673	17,781	3.81
Pigment Red 49:2, calcium toner, C.I. 15 630	886	835	3,913	4.69
Pigment Red 52:1, calcium toner, C.I. 15 860	1,141	1,411	6,994	9.96
Pigment Red 53:1, barium toner, C.I. 15 585	4,866	4,249	17,504	4.11
Pigment Red 57:1, calcium toner, C.I. 15 850	9,005	8,348	42,984	5.15
Pigment Red 81, PMA, C.I. 45 160	423	422	6,282	14.90
Pigment Red 81, PTA	37	...	...	...
All other	2,329	2,042	41,827	20.51

See footnotes at end of table.

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

ORGANIC PIGMENT	PRODUCTION	SALES		
		QUANTITY	VALUE[1]	UNIT VALUE[2]
TONERS--Continued	*1,000 pounds dry basis*[3]	*1,000 pounds dry basis*[3]	*1,000 dollars*	*Per pound*
Violet toners, total	3,628	3,021	54,158	$17.93
Pigment Violet 1, PTA, C.I. 45 170	38	47	726	15.41
Pigment Violet 19, C.I. 46 500	2,367	1,807	37,069	20.51
Pigment Violet 23, C.I. 46 500	225	216	6,516	30.18
All other	998	951	9,847	10.26
Blue toners, total	21,517	20,569	123,970	6.03
Pigment Blue 1 (PMA)	96	84	1,351	16.04
Pigment Blue 15, alpha form, C.I. 74 160	1,216	1,124	6,457	5.74
Pigment Blue 15:1, alpha form, C.I. 74 160	1,027	1,025	10,424	10.17
Pigment Blue 15:2, alpha form, C.I. 74 160	544	877	9,005	10.27
Pigment Blue 15:3, beta form, C.I. 74 160	8,014	7,549	44,159	5.85
Pigment Blue 15:4, beta form, C.I. 74 160	2,579	2,171	11,217	5.17
All other	8,041	7,739	41,357	5.34
Green toners, total	2,198	2,133	17,827	8.36
Pigment Green 7, C.I. 74 260	...	1,892	15,289	8.08
All other	2,198	241	2,538	10.52
Brown and Black toners, total	528	524	1,805	3.43
Pigment Brown 5	39	...	...	...
All other	489	...	...	...
LAKES				
Total	782	609	4,307	7.08
Pigment Red 83, C.I. 58 000	37	37	396	10.77
Pigment Violet 5:1, C.I. 58 055	66	62	537	8.69
All other lakes	679	510	3,374	6.62

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[1] The value of sales for toners is reported on a dry-full strenght basis and the value of sales for lakes is reported on a dry form basis. All sales value data exclude the additional cost of processing or packaging in commercial forms other than the dry full-strength or dry form.

[2] Calculated from unrounded figures.

[3] Quantities for toners are reported as dry full-strength toner content, excluding the weight of any dispersing agent, vehicle, or extender. Quantities for lakes are reported as dry lake content, excluding the weight of any dispersing agent or vehicle.

Note.--The C.I. (*Colour Index*) number shown in this report are the identifying number given in the third edition of the *Colour Index*.

The abbreviations PMA and PTA stand for phosphomolybdic and phosphotungstic (including phosphotungstomolybdic) acids, respectively.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS	
YELLOW TONERS:	
ACETOACETARYLIDE YELLOWS:	
*Pigment Yellow 1	AMS, BAS, CGY, DUP, GLX, HSH, HST, KCW, KON, MRX, ROM, SDH, SNA, VPC.
Pigment Yellow 2	KCW.
*Pigment Yellow 3	BNS, HSH, HST, KCW, SNA, VPC.
Pigment Yellow 42	VPC.
Pigment Yellow 60	HSH.
Pigment Yellow 65	DUP, HSH, SNA, VPC.
Pigment Yellow 73	HSH, HST, SNA, VPC.
*Pigment Yellow 74	BAS, DUP, HSH, HST, SDH, SNA, VPC.
Pigment Yellow 75	HST.
Pigment Yellow 97	HST.
Pigment Yellow 98	HST.
Pigment Yellow 116	VPC.
Acetoacetarylide yellows, all others	HST, KCW, VPC.
DIARYLIDE YELLOWS:	
*Pigment Yellow 12	AMS, APO, BAS, GLX, HSH, HST, ICC, IDC, IND, POP, ROM, SDH, SNA, VPC.
*Pigment Yellow 13	AMS, APO, BAS, GLX, HST, IDC, IND, ROM, SDH, SNA, VPC.
*Pigment Yellow 14	AMS, BAS, BNS, CGY, GLX, HSH, HST, ICC, IDC, IND, ROM, SDH, SNA, VPC.
*Pigment Yellow 17	AMS, APO, BAS, CGY, GLX, HSH, HST, ICC, IDC, IND, ROM, SDH, SNA, VPC.
Pigment Yellow 55	GLX.
*Pigment Yellow 83	BAS, GLX, HST, ICC, IND, ROM, SNA, VPC.
Pigment Yellow 124	GLX.
Pigment Yellow 126	HST.
Pigment Yellow 127	HST.
Pigment Yellow 152	HST.
Diarylide yellows, other	CGY, GLX, ROM, VPC.
YELLOW PIGMENTS, OTHER:	
(Basic Yellow 2), fugitive	MRX.
Pigment Yellow 62	CGY.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
YELLOW TONERS--CONTINUED	
YELLOW PIGMENTS, OTHER--CONTINUED	
Pigment Yellow 110	CGY.
Pigment Yellow 139	VPC.
Pigment Yellow 150	CGY.
ORANGE TONERS:	
Pigment Orange 1	KCW.
Pigment Orange 2	UHL.
*Pigment Orange 5	CGY, HSH, HST, SDH, SNA.
*Pigment Orange 13	BAS, CGY, HSH, IND, ROM, SNA, VPC.
Pigment Orange 15	BNS, CGY.
*Pigment Orange 16	BNS, CGY, GLX, HSH, IND, ROM, VPC.
Pigment Orange 34	GLX, IND, ROM.
Pigment Orange 36	HST, SNA.
Pigment Orange 38	HST, IND.
Pigment Orange 43	HST.
Pigment Orange 46	BAS, SDH, SNA, VPC.
Pigment Orange 48	DUP.
Pigment Orange 49	DUP.
Pigment orange toners, all other	CGY, GLX, VPC.
RED TONERS:	
NAPHTHOL REDS:	
Pigment Red 2	GLX, HSH, HST, KCW.
*Pigment Red 5	CGY, GLX, HSH, ROM.
Pigment Red 7	GLX.
Pigment Red 9	HST, MRX.
Pigment Red 13	KCW.
*Pigment Red 17	BNS, IND, SNA, UHL.
Pigment Red 21	BNS.
Pigment Red 22	CGY, DUP, SNA.
*Pigment Red 23	DUP, GLX, HSH, IND, KCW, SNA, UHL.
Pigment Red 31	ROM, SDH.
Pigment Red 52	VPC.
Pigment Red 112	CGY, HST, VPC.
Pigment Red 146	HST.
Pigment Red 147	HSH.
Pigment Red 170	GLX, HST.
Naphthol reds, all other	BUC, GLX, HST, IND, KCW, ROM, SNA, VPC, X, X.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
RED TONERS--CONTINUED	
RED PIGMENTS, OTHER:	
Pigment Red 1, (light)	HSH.
Pigment Red 2, (dark)	ALE.
*Pigment Red 3	BAS, CGY, CIK, HSH, KCW, MRX, SDH, SNA, UHL.
*Pigment Red 4	ALE, CGY, HSH, KCW, KON, MRX, SDH, UHL.
Pigment Red 6	DUP, KCW.
*Pigment Red 38	HSH, HST, SNA, VPC.
Pigment Red 41	VPC.
Pigment Red 48	CGY, DUP.
*Pigment Red 48:1, (barium)	AMS, BAS, BOR, CIK, DUP, HSH, MGR, MRX, SNA, UHL.
*Pigment Red 48:2, (calcium)	AMS, BAS, CIK, DUP, HSH, MGR, MRX, SDH, SNA, UHL, VPC.
Pigment Red 48:3, (strontium)	CGY, HSH.
Pigment Red 48:4, (manganese)	CGY, DUP, HSH, SNA, VPC.
Pigment Red 49, (sodium)	VPC.
Pigment Red 49:1, (barium)	AMS, BAS, BNS, BOR, CIK, ICC, IDC, MGR, SDH, SNA, UHL.
*Pigment Red 49:2, (calcium)	AMS, BNS, BOR, CIK, IDC, MGR, SDH, SNA.
*Pigment Red 52:1, (calcium)	BAS, CGY, MGR, SNA, UHL.
Pigment Red 52:2, (manganese)	BAS, CGY, HSH, UHL.
Pigment Red 53, (sodium)	ICC.
*Pigment Red 53:1, (barium)	AMS, APO, BAS, BOR, CIK, HSH, ICC, IDC, MGR, MRX, SDH, SNA, UHL.
Pigment Red 57	BNS.
Pigment Red 57:1, (calcium)	AMS, APO, BAS, BNS, BOR, CGY, CIK, DUP, HSH, ICC, IDC, KON, MGR, SDH, SNA, UHL.
Pigment Red 63	HSH, SNA.
Pigment Red 81, (PMA)	LVR, MGR, MRX, SNA, UHL, VPC.
*Pigment Red 81, (PTA)	MGR, MRX, UHL.
Pigment Red 88	VPC.
Pigment Red 90	SDH.
Pigment Red 119	VPC.
Pigment Red 122	SNA.
Pigment Red 123	VPC.
Pigment Red 166	CGY.
Pigment Red 168	VPC.
Pigment Red 179	VPC.
Pigment Red 181	HST.

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TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
RED TONERS--CONTINUED	
PIGMENT RED--CONTINUED	
Pigment Red 188	HST.
Pigment Red 200	BAS, SNA.
Pigment Red 202	CGY, DUP, SNA.
Pigment Red 206	DUP.
Pigment Red 207	CGY, DUP.
Pigment Red 209	SNA.
Pigment Red 211	VPC.
Pigment Red 224	VPC.
Pigment Red 245	IND.
Pigment Red 500	VPC.
Pigment red toners, all other	CGY, DUP, HST.
VIOLET TONERS:	
Pigment Violet 1, (fugitive)	KCW, UHL.
Pigment Violet 1, (PMA)	MGR, MRX, UHL.
Pigment Violet 1, (PTA)	MGR, MRX, SNA, UHL.
Pigment Violet 3, (fugitive)	KCW, MGR, UHL.
Pigment Violet 3, (PMA)	BAS, KON, MGR, MRX, SDH, UHL.
Pigment Violet 3, (PTA)	MGR, MRX, UHL.
Pigment Violet 3	VPC.
Pigment Violet 4, (fugitive)	KCW.
*Pigment Violet 19	DUP, SNA, VPC.
*Pigment Violet 23	HST, ROM, SNA, VPC.
Pigment Violet 29	VPC.
Pigment Violet 42	DUP.
Pigment violet toners, all other	BUC, UHL, VPC, X.
BLUE TONERS:	
*Pigment Blue 1, (PMA)	BNS, MGR, MRX, SDH, UHL.
Pigment Blue 1, (PTA)	MRX.
Pigment Blue 2, (PMA)	LVR, UHL.
Pigment Blue 9, (PMA)	LVR.
Pigment Blue 14, (PMA)	LVR, UHL, VPC.
Pigment Blue 15, (α form)	BAS, CGY, DUP, HSH, SDH, SNA, USM, VPC.
*Pigment Blue 15:1, (α form)	BAS, CGY, DUP, SDH, SNA, VPC.
*Pigment Blue 15:2, (α form)	BAS, CGY, DUP, SDH, SNA, VPC.
*Pigment Blue 15:3, (β form)	AMS, APO, BAS, BOR, BUC, CGY, CIK, CUS, DUP, IDC, IPP, MGR, POP, ROM, SDH, SNA, VPC.
*Pigment Blue 15:4, (β form)	BAS, CGY, DUP, SNA.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
BLUE TONERS--CONTINUED	
Pigment Blue 19	SW.
Pigment Blue 25	GLX.
Pigment Blue 61	BAS.
Pigment blue toners, all other	VPC.
GREEN TONERS:	
Pigment Green 1, (PMA)	HRX, UHL.
Pigment Green 2, (PMA)	MRX.
Pigment Green 2, (PTA)	UHL.
Pigment Green 4, (fugitive)	UHL.
Pigment Green 4, (PMA)	UHL.
Pigment Green 4, (PTA)	UHL.
*Pigment Green 7	ALG, CIK, DUP, POP, SDH, SNA.
Pigment Green 8	CGY, KCW.
Pigment Green 10	DUP.
Pigment Green 36	SNA, VPC.
Pigment green toners, all other	VPC, X.
BROWN TONERS:	
Pigment Brown 2	UHL.
Pigment Brown 3, (fugitive)	KON.
Pigment Brown 3, (PMA)	KON.
Pigment Brown 5	GLX, ICC, VPC.
Pigment Brown 22	VPC.
Pigment brown toners, all other	SDH, VPC.
BLACK TONERS:	
Pigment black toners, all other	UHL, VPC.
LAKES	
YELLOW LAKES:	
(Acid Yellow 1)	KCW.
(Acid Yellow 23)	KON, MRX.
ORANGE LAKES:	
Pigment Orange 17	KCW.
RED LAKES:	
(Acid Red 26)	KCW.
(Basic Red 1)	BNS.
Pigment Red 60:1	HSH, MRX, SNA.
*Pigment Red 83	CGY, HSH, MRX, UHL.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
LAKES--CONTINUED	
VIOLET LAKES:	
(Basic Violet 1)	BNS.
(Basic Violet 4)	BNS.
(Basic Violet 10)	BNS.
(Basic Violet 3, (PMA)	LVR.
*Pigment Violet 5:1	HSH, KON, MRX, UHL, VPC.
BLUE LAKES:	
(Basic Blue 9	LVR.
(Basic Blue 14, (PMA)	LVR.
(Basic Blue 1, (PTA)	LVR.
Pigment Blue 24	SDH.
GREEN LAKES:	
(Acid Green 3)	KCW.
(Basic Green 1, (PMA)	LVR.

TABLE 3.--ORGANIC PIGMENTS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of organic pigments to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ALE	Alex Chemical Co.
ALG	Allegheny Chemical Corp.
AMS	Ridgway Color Co.
APO	Apollo Colors, Inc.
BAS	BASF Wyandotte Corp.
BNS	Binney and Smith, Inc.
BUC	Synalloy Corp., Blackman Uhler Chemical Div.
CGY	Ciba-Geigy Corp.
CIK	Flint Ink Corp., Cal/Ink Div.
CUS	Customs Pigments Corp.
DUP	E. I. duPont de Nemours & Co., Inc., Chemicals and Pigments Dept.
GLX	Galaxie Chemical Corp.
HSH	Harshaw/Filtrol Partnership
HST	American Hoechst Corp., Specialty Products Group, Rhode Island Works
ICC	Inmont Corp. Div. of United Technologies Corp.
IDC	Industrial Color, Inc.
IND	Indol Color Co., Inc.
IPP	Spectrachem Corp.
KCW	Keystone Color Works, Inc.
KON	H. Kohnstamm & Co., Inc.
LVR	C. Lever Co., Inc.
MCA	Johnson Mattney, Inc., Pigment Dept.
MGR	Magruder Color Co., Inc.
POP	Pope Chemical Corp.
ROM	Roma Color, Inc.
SDH	Sterling Drug, Inc., Hilton Davis Chemical Co.
SNA	Sun Chemical Corp., Pigment Div.
SW	Sherwin-Williams Co., Chemical Division
TMS	Sterling Drug, Inc., Hilton Davis Chemical Co.
UHL	Paul Uhlich & Co., Inc.
VPC	Mobay Chemical Corp., Dyes & Pigments Div.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

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STATISTICAL HIGHLIGHTS

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Medicinal chemicals include the medicinal and feed grades of all organic chemicals having therapeutic value, whether obtained by chemical synthesis, by fermentation, by extraction from naturally occurring plant or animal substances, or by refining a technical grade product. They include antibiotics and other anti-infective agents, antihistamines, autonomic drugs, cardiovascular agents, central nervous system depressants and stimulants, hormones and synthetic substitutes, vitamins, and other therapeutic agents for human or veterinary use, and for animal feed supplements.

The table shows statistics for production and sales of medicinal chemicals grouped by pharmacological class. The statistics shown are for bulk chemicals only. Finished pharmaceutical preparations and products put up in pills, capsules, tablets, or other measured doses are excluded.[1] The difference between production and sales reflects inventory changes, processing losses, and captive consumption of medicinal chemicals processed into ethical and proprietary pharmaceutical products by the primary manufacturer. In some instances, the difference may also include quantities for medicinal grade products used as intermediates; for example, penicillin V used as an intermediate in the manufacture of other antibiotics. All quantities are given in terms of 100 percent content of the pure bulk drug.

Total U.S. production of bulk medicinal chemicals in 1984 amounted to 278.6 million pounds. Total sales of bulk medicinal chemicals in 1984 amounted to 152.4 million pounds, valued at $1,369.4 million. Beginning in 1980, methionine and most other amino acids and their salts are reported in the section on Miscellaneous End-Use Chemicals and Chemical Products. Section totals are not, therefore, comparable with years prior to 1980.

Production of the larger groups of medicinal chemicals in 1984 was as follows: Antibiotics, 30.4 million pounds, 4.5 percent less than in 1983; anti-infective agents other than antibiotics, 27.2 million pounds, 19.0 percent more than in 1983; central nervous system depressants and stimulants, 69.2 million pounds, 7.2 percent more than in 1983; gastrointestinal agents and therapeutic nutrients, 54.7 million pounds, 6.1 percent less than in 1983; and vitamins, 49.9 million pounds, 28.2 percent more than in 1983.

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[1] Complementary statistics on the dollar value of manufacturers' shipments of finished pharmaceutical preparations, except biologicals, are published annually by the U.S. Department of Commerce, Bureau of the Census, in Current Industrial Reports, Series MA-28G. Many pharmaceutical manufacturers that report to the Bureau of the Census are excluded from the U.S. International Trade Commission report because they are not primary producers of medicinal chemicals; that is, they do not themselves produce the bulk drugs which go into their pharmaceutical products, but purchase their drug requirements from domestic or foreign producers.

Production of some of the more important individual products in the table was as follows: Choline chloride, 49.5 million pounds, 6.2 percent less than in 1983; aspirin, 33.9 million pounds, 10.4 percent more; and vitamin E, 11.6 million pounds, 33.4 percent more.

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1984

[Listed below are all synthetic organic medicinal chemicals for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all medicinal chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

MEDICINAL CHEMICALS	PRODUCTION[1]	SALES		
		QUANTITY	VALUE	UNIT VALUE[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	278,640	152,448	1,369,435	$9.01
Acyclic	54,910	44,091	128,739	2.92
Benzenoid[3]	146,274	70,879	696,945	9.95
Cyclic nonbenzenoid[4]	77,456	37,478	543,751	14.13
Antibiotics, total	30,442	9,912	447,067	45.10
Cephalosporins	1,432	...	...	...
Penicillins, semisynthetic, total	2,032	259	13,472	52.12
Amoxicillin	880	...	...	...
Ampicillin	728	...	...	...
Cloxacillin, sodium	36	...	...	...
Dicloxacillin, sodium	60	...	...	...
Oxacillin, sodium	41	...	...	...
All other (semisynthetic)[5]	287	259	13,472	52.12
Penicillins (except semisynthetic), for all uses	...	562	8,530	15.18
Other antibiotics, total	26,978	9,091	425,065	46.76
For medicinal use[6]	8,358	1,990	304,057	152.79
For nonmedicinal uses[7]	18,620	7,101	121,008	17.04
Antihistamines, total	221	154	7,891	51.24
Antinauseants	54	51	2,144	42.04
All other	167	103	5,747	56.34
Anti-infective agents (except antibiotics), total	27,234	9,111	44,112	4.84
Anthelmintics	10,064	3,993	5,669	1.42
Antiprotozoan agents, total	10,645	1,559	9,660	6.20
Urinary antiseptics	124	...	...	...
Other anti-infective agents[8]	6,401	3,559	28,783	8.09
Autonomic drugs, total	1,033	816	17,515	21.46
Sympathomimetic (adrenergic) agents, total	1,010	812	15,344	18.90
Phenylpropanolamine hydrochloride	471	...	...	...
All other	539	812	15,344	18.90
Other autonomic drugs	23	4	2,171	723.67
Central depressants and stimulants, total	69,211	46,767	328,810	6.88
Analgesics, antipyretics, and nonhormonal anti-inflammatory agents, total	61,706	42,633	130,052	3.05
Aspirin	33,938	...	...	...
Acetaminophen	24,064	22,627	55,823	2.47
All other[9]	3,704	20,006	74,229	3.71
Anticonvulsants, hypnotics, and sedatives	1,760	300	34,004	113.35
Antidepressants	132	18	1,684	93.56
Antitussives, total	295	293	50,361	171.88

See footnotes at end of table.

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MEDICINAL CHEMICALS	PRODUCTION[1]	SALES		
		QUANTITY	VALUE	UNIT VALUE[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Central depressants and stimulants--Continued				
Tranquilizers	170	35	6,569	$187.69
Phenothiazine derivatives	48	5	3,327	831.75
All other	122	30	3,242	108.10
Other central depressants and stimulants[10]	5,148	3,488	106,140	30.46
Dermatological agents	...	4,218	4,939	1.17
Expectorants and mucolytic agents	1,202	954	7,110	7.45
Gastrointestinal agents and therapeutic nutrients, total[11]	54,663	42,058	31,646	.75
Choline chloride, all grades	49,538	39,423	21,420	.54
All other	5,125	2,635	10,226	3.88
Local anesthetics, total	154	144	1,661	11.53
Lidocaine	...	19	273	14.37
All other	154	125	1,388	11.10
Renal-acting and edema-reducing agents	1,113	198	12,035	60.78
Smooth muscle relaxants[12]	62	...	...	...
Vitamins, total	49,940	34,821	194,178	5.58
Vitamin E	11,639	6,692	75,806	11.33
All other vitamins[13]	38,301	28,129	118,372	4.21
Miscellaneous medicinal chemicals[14]	43,365	3,295	272,471	82.64

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[1] The data on production and sales are for bulk medicinal chemicals only. Methionine and most other amino acids and their salts are now reported in the section on Miscellaneous End-Use Chemicals and Chemical Products. Section totals are not, therefore, comparable with years prior to 1980.

[2] Calculated from rounded figures.

[3] Benzenoid, as used in this report, describes any cyclic medicinal chemical whose molecule contains either a 6-membered carbocyclic ring with conjugated double bonds or a 6-membered heterocyclic ring with 1 or 2 hetero atoms and conjugated double bonds, except the pyrimidine ring.

[4] Includes antibiotics of unknown structure.

[5] Includes sales quantity and value of amoxicillin; ampicillin; cloxacillin, sodium; dicloxacillin, sodium; and oxacillin, sodium.

[6] Includes production and sales of antifungal and antitubercular antibiotics and tetracyclines; and sales quantity and value of cephalosporins; and production of penicillins (except semisynthetic).

[7] Includes production and sales of tetracyclines; and production of penicillins (except semisynthetic).

[8] Includes sales quantity and value of urinary antiseptics; does not include production of sulfaguanidine used as an intermediate in the production of anti-infective sulfonamides.

[9] Includes sales quantity and value of aspirin.

[10] Includes production and sales of amphetamines, general anesthetics, respiratory and cerebral stimulants, and skeletal muscle relaxants.

[11] Methionine and its salts are now reported in the section in Miscellaneous End-Use Chemicals and Chemical Products under amino acids.

[12] Includes theophylline derivatives.

[13] Includes production and sales of vitamin A, vitamin B, vitamin C, vitamin D, and vitamin K.

[14] Includes production and sales of antineoplastic agents, cardiovascular agents, diagnostic agents, hematological agents, and unclassified medicinal chemicals. Also includes sales quantity and value of hormones and synthetic substitutes, and smooth muscle relaxants.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTIBIOTICS:	
*CEPHALOSPORINS:	
Cefaclor	LIL.
Cefamandole	LIL.
Cefazolin, sodium	LIL.
Cefoxitin	MRK.
Cephalexin	LIL.
Cephaloridine	LIL.
Cephalothin, sodium	BRS, LIL.
Cephapirin	BRS.
Cephapirin, sodium	BRS.
Cephradine	SK, TRD.
* PENICILLINS, SEMISYNTHETIC:	
*AMOXICILLIN:	
Amoxicillin (trihydrate)	BEE, BOC, BRS.
Amoxicillin (anhydrous)	BRS, WYT.
*AMPICILLIN:	
Ampicillin (anhydrous)	BRS, WYT.
Ampicillin (trihydrate)	BEE, BOC, BRS.
OTHER SEMISYNTHETIC PENICILLINS:	
Ampicillin, sodium	BEE, BRS, WYT.
Carbenicillin, disodium	BEE, PFZ.
Carbenicillin indanyl, sodium	PFZ.
Cloxacillin, benzathine	BEE, BRS.
*Cloxacillin, sodium	BEE, BOC, BRS.
Cyclacillin	BRT, WYT.
*Dicloxacillin, sodium	BEE, BOC, BRS, WYT.
Hetacillin, potassium	BRS.
Methicillin, sodium	BRS.
Nafcillin, sodium	BEE, BRS, WYT.
*Oxacillin, sodium	BEE, BOC, BRS.
Piperacillin	BRS.
Ticarcillin, disodium	BEE.
* PENICILLINS (EXCEPT SEMISYNTHETIC):	
FOR MEDICINAL USE:	
Penicillin V	PFZ, WYT.
Penicillin G, benzathine	WYT.
Penicillin G, potassium	PFZ, WYT.
Penicillin V, potassium	BRS, LIL.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTIBIOTICS--CONTINUED	
*PENICILLINS (EXCEPT SEMISYNTHETIC)--CONTINUED	
FOR MEDICINAL USE--CONTINUED	
Penicillin G, procaine (medicinal grade)	PFZ.
FOR NONMEDICINAL USES:	
Penicillin G, procaine (animal feed grade)	MRK, PFZ.
TETRACYCLINES:	
FOR MEDICINAL USE:	
Chlortetracycline (medicinal grade)	ACY.
Demeclocycline	ACY.
Doxycycline	PFZ.
Minocycline	ACY.
Oxytetracycline (medicinal grade)	PFZ.
Tetracycline	ACY.
FOR NONMEDICINAL USES:	
Chlortetracycline (animal feed grade)	ACY.
Oxytetracycline (animal feed grade)	PFZ.
*OTHER ANTIBIOTICS:	
*FOR MEDICINAL USE:	
ANTIFUNGAL ANTIBIOTICS:	
Amphotericin B	PEN, TRD.
Nystatin (medicinal grade)	ACY, TRD.
Tobramycin	LIL.
ANTITUBERCULAR ANTIBIOTICS:	
Dihydrostreptomycin	PFZ.
Streptomycin (medicinal grade)	PFZ.
OTHER ANTIBIOTICS FOR MEDICINAL USE:	
Amikacin sulfate	BRS.
Aztreonam	TRD.
Bacitracin (medicinal grade)	IMC.
Cefonicid	SK.
Chloramphenicol	PD.
Chloramphenicol, monosuccinic acid ester	PD.
Clindamycin	UPJ.
Erythromycin	ABB, UPJ.
Erythromycin estolate	LIL.
Erythromycin stearate	UPJ.
Gentamycin	SCH.
Imipenem	MRK.
Kanamycin	BRS.
Lincomycin (medicinal grade)	UPJ.
Moxalactam	LIL.
Neomycin (medicinal grade)	UPJ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTIBIOTICS--CONTINUED	
*PENICILLINS (EXCEPT SEMISYNTHETIC)--CONTINUED	
FOR MEDICINAL USE--CONTINUED	
*OTHER ANTIBIOTICS FOR MEDICINAL USE--CONTINUED	
Netilmicin	SCH, UPJ.
Novobiocin, sodium	UPJ.
Polymyxin B	PFZ.
Sisomycin	SCH.
Spectinomycin (medicinal grade)	ABB, UPJ.
Thiostrepton	TRD.
Vancomycin	LIL.
*FOR NONMEDICINAL USES:	
Bacitracin (animal feed grade)	IMC.
Cycloheximide	UPJ.
Hygromycin B	LIL.
Lasalocid	HOF, X.
Lincomycin (animal feed grade)	UPJ.
Monensin	LIL.
Neomycin (animal feed grade)	PFZ, UPJ.
Streptomycin	LIL, PFZ.
Tylosin	LIL.
*ANTIHISTAMINES:	
*ANTINAUSEANTS:	
Cyclizine hydrochloride	BUR.
Dimenhydrinate	GAN.
Meclizine hydrochloride	PFZ.
Metoclopramide hydrochloride	LLI.
Trimethobenzamide hydrochloride	HOF.
*OTHER ANTIHISTAMINES:	
Azatadine maleate	SCH.
Brompheniramine maleate	HEX, LLI.
Chlorpheniramine maleate	HEX, SK.
Cyproheptadine hydrochloride	MRK.
Dexbrompheniramine maleate	HEX.
Dexchlorpheniramine maleate	SCH.
Dimethindene maleate	CGY.
Diphenhydramine citrate	WYK.
Diphenhydramine hydrochloride	PD, WYK.
Doxylamine succinate	BKC, HOF.
Phenindamine tartrate	HOF.
Phenyltoloxamine citrate	GAN.
Pyrilamine maleate	HEX.
Tripelennamine	CGY.
Tripelennamine citrate	CGY.
Tripelennamine hydrochloride	CGY.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS):	
*ANTHELMINTICS:	
Dichlorvos	SHC.
Diethylcarbamazine citrate	SK.
Ivermectin	MRK.
Phenothiazine	WAG.
Piperazine	TX, UCC.
Piperazine dihydrochloride	FLM.
Piperazine hexahydrate	TX.
Piperazine hydrochloride	DAN, FLM, TX, WHL.
Piperazine phosphate	TX.
Pyrantel pamoate	PFZ.
Pyrantel tartrate	PFZ.
Thenium closylate	SFS.
Thiabendazole	MRK.
*ANTIPROTOZOAN AGENTS:	
ARSENIC AND BISMUTH COMPOUNDS:	
Arsanilic acid	FLM, WHL.
Bismuth subsalicylate	NOR.
Carbarsone	WHL.
Nitarsone	SAL.
Roxarsone	SAL.
Roxarsone, sodium	SAL.
Sodium arsanilate	WHL.
OTHER ANTIPROTOZOAN AGENTS:	
Aklomide	SAL.
Amodiaquine hydrochloride	PD.
Amprolium	MRK.
Dinitolmide	SAL.
Ethopabate	MRK.
Hydroxychloroquine sulfate	SDW.
Iodochlorhydroxyquin	CGY.
Ipronidazole	HOF.
Metronidazole	SRL.
Nitromide	SAL.
Primaquine phosphate	SDW.
SULFONAMIDES:	
Mafenide	SDW.
Mafenide acetate	SDW.
Sulfabenzamide	ACY.
Sulfacetamide	SCH.
Sulfadiazine	ACY.
Sulfadimethoxine	HOF.

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TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS)--CONTINUED	
SULFONAMIDES--CONTINUED	
Sulfamethazine	SAL.
Sulfamethazine, sodium	SAL.
Sulfamethizole	ACY.
Sulfamethoxazole	HOF.
Sulfanilamide	SAL.
Sulfanitran	SAL.
Sulfasalazine	SAL.
Sulfathiazole, sodium	SAL.
Sulfisoxazole	HOF.
Sulfisoxazole, acetyl	HOF.
*URINARY ANTISEPTICS:	
Methenamine	PD.
Methenamine hippurate	RIK.
Methenamine mandelate	ARN, PD.
*OTHER ANTI-INFECTIVE AGENTS:	
ANTIFUNGAL AGENTS:	
Benzoic acid	KLM.
Calcium undecylenate	WTL.
Sodium caprylate	LEM.
Zinc undecylenate	WTL.
ANTILEPROTIC AND ANTITUBERCULAR AGENTS:	
Aminosalicylic acid	HXL.
Sulfoxone, sodium	ABB.
MERCURY COMPOUNDS:	
Merbromin	HYN.
GENERAL ANTISEPTICS AND ANTIBACTERIAL AGENTS:	
Benzethonium chloride	PD.
Bromchlorenone	MHI.
Carbadox	PFZ.
Cetylpyridinium chloride	HEX, HXL.
Chlorhexidine gluconate	WHL.
Chlorobutanol	SFS.
m-Cresyl acetate	ADC.
8-Hydroxy-5-quinolinesulfonic acid	MRK, RSA.
Iodoform	DPW.
Nalidixic acid	SDH.
Ormetoprim	HOF.
Povidone - iodine	GAF.
Pyrithione, zinc	NES.
Resorcinol	KPT, LEM.
Trimethoprim	BUR.
Anti-infective agents, all other	LIL.

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TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*AUTONOMIC DRUGS:	
*SYMPATHOMIMETIC AGENTS:	
Dobutamine hydrochloride	LIL.
Dopamine hydrochloride	HEX.
Mephentermine sulfate	ARA.
Methoxyphenamine hydrochloride	HXL.
Naphazoline hydrochloride	CGY.
Phenylephrine	SDW.
Phenylephrine bitartrate	GAN.
Phenylephrine hydrochloride	GAN, LLI, SDW.
*Phenylpropanolamine hydrochloride	ARS, GAN, NEP, ORT.
Propylhexedrine	PD, SK.
Pseudoephedrine hydrochloride	BUR, GAN.
Pseudoephedrine sulfate	GAN.
Terbutaline sulfate	CGY.
Tetrahydrozoline hydrochloride	PFZ.
*OTHER AUTONOMIC DRUGS:	
PARASYMPATHOLYTIC QUATERNARY AMMONIUM COMPOUNDS (EXCEPT TROPANE DERIVATIVES):	
Glycopyrrolate	LLI.
Isopropamide iodide	SK.
Propantheline bromide	SRL.
Tridihexethyl chloride	ACY.
PARASYMPATHOLYTIC TERTIARY AMINES (EXCEPT TROPANE DERIVATIVES):	
Oxybutynin chloride	PD.
Oxyphencyclimine hydrochloride	PFZ.
Trihexyphenidyl hydrochloride	ACY.
PARASYMPATHOLYTIC TROPANE DERIVATIVES:	
Anisotropine methylbromide	ARA.
Benztropine mesylate	ARA.
PARASYMPATHOMIMETIC AGENTS:	
Bethanechol chloride	GAN.
Neostigmine methylsulfate	HOF.
Pyridostigmine bromide	HOF.
SYMPATHOLYTIC AGENTS:	
Timolol maleate	MRK.
*CENTRAL DEPRESSANTS AND STIMULANTS:	
*ANALGESICS, ANTIPYRETICS, AND NONHORMONAL ANTI-INFLAMMATORY AGENTS:	
*Acetaminophen	MAL, MON, PEN, SWD.
Aminobenzoic acid	WYK.
*Aspirin	DOW, MON, NOR, SD.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS:	
*ANALGESICS, ANTIPYRETICS, AND NONHORMONAL ANTI-INFLAMMATORY AGENTS--CONTINUED	
Aurothioglucose	SCH.
Choline magnesium salicylate	LEM.
Diflunisal	MRK.
Fenoprofen	LIL.
Ibuprofen	TNA.
Indomethacin	MRK.
Isoxicam	PD.
Meclofenamate, sodium	PD.
Meclofenamic acid	PD.
Mefenamic acid	PD.
Meperidine hydrochloride	PEN, SDW, WYT.
Methadone hydrochloride	MAL.
Morphine sulfate	MAL, PEN.
Oxycodone hydrochloride	DUP, MAL, PEN.
Oxyphenbutazone	CGY.
Pentazocine	SD.
Pentazocine hydrochloride	SD.
Phenylbutazone	CGY.
Piroxicam	PFZ.
Potassium aminobenzoate	GAN.
Potassium salicylate	KLM.
Propoxyphene hydrochloride	GAN, LIL.
Propoxyphene napsylate	GAN, LIL.
Salicylates, all other	DOW.
Salsalate	WYK.
Sodium aminobenzoate	GAN.
Sodium salicylate	KLM.
Sulindac	MRK.
*ANTICONVULSANTS, HYPNOTICS, AND SEDATIVES:	
ANTICONVULSANTS (EXCEPT BARBITURATES):	
Aminoglutethimide	CGY.
Carbamazepine	CGY.
Ethosuximide	PD.
Ethotoin	ABB.
Methsuximide	PD.
Phenytoin	PD.
Phenytoin, sodium	PD.
Valproic acid	ABB.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
BARBITURATES:	
Amobarbital	GAN.
Amobarbital, sodium	GAN.
Butabarbital	GAN.
Butabarbital, sodium	ABB, GAN.
Butalbital	GAN.
Mephobarbital	GAN.
Metharbital	ABB.
Pentobarbital	GAN.
Pentobarbital, sodium	ABB, GAN.
Phenobarbital	GAN.
Phenobarbital, sodium	GAN.
Secobarbital	GAN.
Secobarbital, sodium	GAN.
Talbutal	GAN.
Thiamylal, sodium	ABB, PD.
Thiopental, sodium	ABB.
HYPNOTICS AND SEDATIVES (EXCEPT BARBITURATES):	
Alprazolam	UPJ.
Ethchlorvynol	ABB.
Glutethimide	CGY, GAN.
Methyprylon	HOF.
*ANTIDEPRESSANTS:	
Amitriptyline hydrochloride	GAN, MRK.
Doxepin hydrochloride	PFZ, SK.
Imipramine hydrochloride	CGY.
Maprotiline hydrochloride	CGY.
Nortriptyline hydrochloride	LIL.
*ANTITUSSIVES:	
Benzonatate	CGY.
Caramiphen edisylate	SK.
Codeine	MAL, MRK, PEN.
Dextromethorphan hydrobromide	AMD, HOF.
Hydrocodone bitartrate	MAL.
Noscapine	MAL, PEN.
Thebaine	MAL, PEN.
*TRANQUILIZERS:	
*PHENOTHIAZINE DERIVATIVES:	
Chlorpromazine hydrochloride	SK.
Fluphenazine hydrochloride	TRD.
Perphenazine	SCH.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
*TRANQUILIZERS:	
*PHENOTHIAZINE DERIVATIVES--CONTINUED	
Prochlorperazine maleate	SK.
Promazine hydrochloride	WYT.
Promethazine hydrochloride	WYT.
Trifluoperazine	SK.
Trifluoperazine hydrochloride	SK.
*OTHER TRANQUILIZERS:	
Buclizine hydrochloride	PFZ.
Chlormezanone	SDW.
Chlorprothixene	HOF.
Clorazepate dipotassium	ABB.
Hydroxyzine pamoate	LEM, PFZ.
Lorazepam	WYT.
Meprobamate	ABB.
Molindone hydrochloride	PD.
Oxazepam	WYT.
Prazepam	MEP.
Thiothixene hydrochloride	PFZ.
Triazolam	UPJ.
*OTHER CENTRAL DEPRESSANTS AND STIMULANTS:	
AMPHETAMINES:	
Amphetamine	ARN.
Amphetamine sulfate	ARN.
Dextroamphetamine	ARN.
Dextroamphetamine sulfate	ARN, SK.
Methamphetamine	ARN.
Methamphetamine hydrochloride	ARN.
GENERAL ANESTHETICS:	
Enflurane	OH.
Isoflurane	OH.
Ketamine hydrochloride	PD.
RESPIRATORY AND CEREBRAL STIMULANTS:	
CAFFEINE (NATURAL AND SYNTHETIC):	
Caffeine, natural	CPR, GNF.
Caffeine, synthetic	PFZ.
OTHER RESPIRATORY AND CEREBRAL STIMULANTS:	
Diethylpropion hydrochloride	BKC, GAN.
Doxapram hydrochloride	LLI.
Methylphenidate hydrochloride	CGY.
Nikethamide	CGY.
Phendimetrazine tartrate	GAN.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
RESPIRATORY AND CEREBRAL STIMULANTS--CONTINUED	
OTHER RESPIRATORY AND CEREBRAL STIMULANTS--CONTINUED	
Phentermine	GAN, HEX, SWD.
Phentermine hydrochloride	HEX.
SKELETAL MUSCLE RELAXANTS:	
Methocarbamol	LLI.
Orphenadrine citrate	RIK.
Succinylcholine chloride	ABB, BUR.
Tubocurarine	ABB.
*DERMATOLOGICAL AGENTS:	
Allantoin	HFT.
Aluminum phenolsulfonate	SAL.
Ammonium phenolsulfonate	SAL.
Salicylic acid	DOW, KLM, MON.
Zinc phenolsulfonate	MAL, SAL.
*EXPECTORANTS AND MUCOLYTIC AGENTS:	
Ethylenediamine dihydroiodide	AJY, DPW, WAG, WHL.
Guaifenesin	LLI.
Iodinated glycerol	X.
Potassium guaiacolsulfonate	KLM.
*GASTROINTESTINAL AGENTS AND THERAPEUTIC NUTRIENTS:	
GASTROINTESTINAL AGENTS:	
*CHOLINE CHLORIDE (ALL GRADES):	
Choline chloride (animal feed grade)	CHO, HFT, IMC, NUT, TMH.
Choline chloride (medicinal grade)	HFT.
*OTHER GASTROINTESTINAL AGENTS:	
Betaine hydrochloride	HFT.
Calcium polycarbophil	LLI.
Choline bicarbonate	HFT, IMC.
Choline bitartrate	HFT.
Choline citrate	HFT.
Choline dihydrogen citrate	HFT.
Cimetidine	SK.
Cimetidine hydrochloride	SK.
Colestipol hydrochloride	UPJ.
Dextrothyroxine, sodium	BAX.
Dihydroxyaluminum aminoacetate	CHT.
Diphenoxylate	MAL.
Docusate, calcium	ACY.
Docusate, potassium	ACY.
Docusate, sodium	ACY, MAL.
Gemfibrozil	PD.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*GASTROINTESTINAL AGENTS AND THERAPEUTIC NUTRIENTS--CONTINUED	
GASTROINTESTINAL AGENTS--CONTINUED:	
OTHER GASTROINTESTINAL AGENTS--CONTINUED	
Lipotropic agents and cholesterol reducers, other than choline salts, all other	UPJ.
Phenolphthalein	SCH.
Sitosterols	UPJ.
THERAPEUTIC NUTRIENTS:	
Calcium gluceptate	PFN.
Copper gluconate	PFZ.
Magnesium gluconate	PFZ.
Manganese gluconate	PFZ.
Potassium gluconate	PFZ.
Zinc gluconate	PFZ.
Therapeutic nutrients, all other	LEM.
HORMONES AND SYNTHETIC SUBSTITUTES:	
ANABOLIC AGENTS AND ANDROGENS:	
Fluoxymesterone	UPJ.
Methyltestosterone	UPJ.
Oxandrolone	SRL.
Stanozolol	SD.
Testosterone	UPJ.
Testosterone cypionate	UPJ.
Testosterone enanthate	UPJ.
Testosterone propionate	UPJ.
Zeranol	IMC.
Anabolic agents and androgens, all other	X.
CORTICOSTEROIDS:	
Aclomethasone	SCH.
Betamethasone	SCH.
Betamethasone dipropionate	SCH.
Betamethasone sodium phosphate	SCH.
Betamethasone valerate	SCH.
Cortisone acetate	UPJ.
Dexamethasone	MRK, SCH, UPJ.
Dexamethasone sodium phosphate	MRK.
Diflorasone diacetate	UPJ.
Fludrocortisone acetate	UPJ.
Fluorometholone	UPJ.
Halcinonide	TRD.
Hydrocortisone	UPJ.
Hydrocortisone acetate	UPJ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
HORMONES AND SYNTHETIC SUBSTITUTES--CONTINUED	
CORTICOSTEROIDS--CONTINUED	
Medrysone	UPJ.
Meprednisone	UPJ.
Meprednisone acetate	UPJ.
Methylprednisolone	ABB, UPJ.
Prednisolone	UPJ.
Prednisolone acetate	UPJ.
Prednisone	UPJ.
Triamcinolone	TRD, X.
Triamcinolone acetonide	TRD, UPJ.
Triamcinolone diacetate	TRD, UPJ.
Corticosteroids, all other	X.
ESTROGENS AND PROGESTOGENS:	
ESTROGENS:	
Dienestrol	X.
Estradiol cypionate	UPJ.
Estrogens, conjugated	ORG.
Estrogens, esterified	ORG.
Estrone	SRL.
Estrogens, all other	ORG.
PROGESTOGENS:	
Hydroxyprogesterone caproate	UPJ.
Medroxyprogesterone acetate	SRL, UPJ.
Megestrol acetate	UPJ.
Melengestrol acetate	UPJ.
Progesterone	UPJ.
Progestins, all other	UPJ.
SYNTHETIC HYPOGLYCEMIC AGENTS:	
Acetohexamide	LIL.
Chlorpropamide	PFZ.
Tolazamide	UPJ.
Tolbutamide	UPJ.
Synthetic hypoglycemic agents, all other	X.
THYROID HORMONE AND ANTITHYROID AGENTS:	
Levothyroxine, sodium	BAX.
Methimazole	LIL.
Thyroglobulin	WEP.
Thyroid	ARP.
OTHER HORMONES AND SYNTHETIC SUBSTITUTES:	
Calcitonin	ARP.
Corticotropin	ARP, ORG.
Danazol	SD.
Dinoprost tromethamine	UPJ.
Glucagon	LIL.
Gonadorelin	BIB.
Insulin	LIL.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THYROID HORMONE AND ANTITHYROID AGENTS:	
*LOCAL ANESTHETICS:	
Benzocaine	WYK.
Butamben	ABB.
Cocaine	MRK.
Dibucaine	CGY.
Dibucaine hydrochloride	CGY.
*Lidocaine	LEM, SDW, WYK.
Lidocaine hydrochloride	LEM, WYK.
Mepivacaine hydrochloride	LEM.
Pramoxine hydrochloride	ABB.
Prilocaine hydrochloride	WYK.
*RENAL-ACTING AND EDEMA-REDUCING AGENTS:	
BENZOTHIADIAZINE DERIVATIVES:	
Benzthiazide	PFZ.
Chlorothiazide	MRK.
Hydrochlorothiazide	ABB, CGY, MRK, SK.
Methyclothiazide	ABB.
Trichlormethiazide	SCH.
OTHER RENAL-ACTING AND EDEMA-REDUCING AGENTS:	
Acetazolamide	ACY.
Amiloride hydrochloride	MRK.
*Canrenoate, potassium	MRK.
Dichlorphenamide	MRK.
Ethacrynic acid	MRK.
Probenecid	MRK, SAL.
Spironolactone	SRL.
Sulfinpyrazone	CGY.
Triamterene	SK.
*SMOOTH MUSCLE RELAXANTS:	
Flavoxate hydrochloride	SK.
Oxtriphylline	NEP, PD.
Theophylline sodium glycinate	CHT.
*VITAMINS:	
VITAMIN A:	
Beta carotene (provitamin A)	HOF.
Tretinoin (vitamin A acid)	EK.
Vitamin A acetate (animal feed grade)	BAS, HOF.
Vitamin A acetate (medicinal grade)	HOF.
Vitamin A alcohol	HOF.
Vitamin A palmitate (medicinal grade)	HOF.
Vitamin A propionate	HOF.

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TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*VITAMINS--CONTINUED	
VITAMIN B-COMPLEX:	
NIACIN AND DERIVATIVES:	
Niacin (animal feed grade)	NEP.
Niacin (medicinal grade)	NEP.
Niacinamide (medicinal grade)	NEP, RIL.
Niacinamide (animal feed grade)	RIL.
PANTOTHENIC ACID DERIVATIVES:	
Dexpanthenol	HOF.
Panthenol	HOF.
OTHER B-COMPLEX VITAMINS:	
Biotin	HOF.
Cyanocobalamin (animal feed grade)	MRK.
Cyanocobalamin (medicinal grade)	MRK.
Cyanocobalamin (U.S.P. crystalline)	MRK.
Pyridoxine	HOF.
Riboflavin (animal feed grade)	MRK.
Riboflavin (medicinal grade)	HOF, MRK.
Thiamine hydrochloride	HOF.
Thiamine mononitrate	HOF.
VITAMIN C:	
Ascorbic acid	HOF.
Sodium ascorbate	HOF.
VITAMIN D:	
Cholecalciferol (Vitamin D_3)	VTM.
Ergocalciferol (Vitamin D_2)	VTM.
*VITAMIN E:	
DL-ALPHA TOCOPHERYL ACETATE (ALL GRADES):	
dl-α Tocopheryl acetate (animal feed grade)	BAS, HOF.
dl-α Tocopheryl acetate (medicinal grade)	BAS, HOF.
OTHER VITAMIN E:	
d-α Tocopherol	EKT, SCP.
dl-α Tocopherol	HOF.
d-α Tocopheryl acetate	EKT, SCP.
d-α Tocopheryl acid succinate	EKT, SCP.
VITAMIN K:	
MENADIONE SODIUM BISULFITE:	
Menadione sodium bisulfite (anhydrous)	ABB.
Menadione sodium bisulfite (trihydrate)	HET.
*MISCELLANEOUS MEDICINAL CHEMICALS:	
ANTINEOPLASTIC AGENTS:	
Azathioprine	BUR.
Cytarabine	UPJ.

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TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*MISCELLANEOUS MEDICINAL CHEMICALS--CONTINUED	
ANTINEOPLASTIC AGENTS--CONTINUED	
Mercaptopurine	BUR.
Methotrexate	BRS.
Thioguanine (hemihydrate)	BUR, LIL.
Vinblastine sulfate	LIL.
Vincristine sulfate	LIL.
CARDIOVASCULAR AGENTS:	
ANTIHYPERTENSIVE AGENTS:	
Captopril	TRD.
Diazoxide	SCH.
Guanabenz	WYT.
Guanethidine sulfate	CGY.
Hydralazine hydrochloride	CGY.
Methyldopa	MRK.
Metoprolol tartrate	CGY.
Nadolol	TRD.
Prazosin hydrochloride	PFZ.
Enalapril maleate	MRK.
VASODILATORS:	
Amyl nitrite	BUR, FKE.
Flecanide acetate	RIK.
Nifedipine	PFZ.
OTHER CARDIOVASCULAR AGENTS:	
Digoxin	BUR.
Disopyramide phosphate	SRL.
Procainamide hydrochloride	PD, WYK.
Tocainide	MRK.
DIAGNOSTIC AGENTS:	
ROENTGENOGRAPHIC CONTRAST MEDIA:	
Diatrizoate, meglumine	SDW.
Diatrizoate, sodium	SDW.
Iopanoic acid	SDW.
Iothalamate, meglumine	MAL.
Meglumine	SDW.
Tyropanoate, sodium	SDW.
Roentgenographic contrast media, all other	SDW.
OTHER DIAGNOSTIC AGENTS:	
Albumin	SPR.
Aminohippuric acid	WYK.
Glutamyl-p-nitroaniline (liver function test)	REG.
Indocyanine green	HYN.
Metyrapone	CGY.
Phenolsulfonphthalein	HYN.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*MISCELLANEOUS MEDICINAL CHEMICALS--CONTINUED	
HEMATOLOGICAL AGENTS:	
ANTICOAGULANTS:	
Ammonium heparin	RIK, SPR.
Anisindione	SCH.
Benzalkonium heparin	RIK.
Lithium heparin	RIK, SPR.
Potassium warfarin	X.
Sodium heparin	SPR.
Warfarin	SDW.
OTHER HEMATOLOGICAL AGENTS:	
Cellulose, oxidized	EKT.
Dextran	PHR.
UNCLASSIFIED MEDICINAL CHEMICALS:	
Allopurinol	BUR.
Carbidopa	MRK.
Etidronate, disodium	NOR.
Levodopa	MON.

TABLE 3.--MEDICINAL CHEMICALS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of medicinal chemicals to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ABB	Abbott Laboratories
ACY	American Cyanamid Co.
ADC	Anderson Development Co.
AJY	Ajay Chemicals, Inc.
AMD	Cyclo Products, Inc.
ARA	Syntex Chemicals, Inc.
ARN	Arenol Chemical Corp.
ARP	Armour Pharmaceutical Co.
ARS	Arsynco, Inc.
BAS	BASF Wyandotte Corp.
BAX	Baxter Travenol Laboratories, Inc.
BEE	Beecham, Inc., Beecham Laboratories Div.
BIB	Beckman Instruments, Inc., Spinco Div.
BKC	J. T. Baker Chemical Co.
BOC	Biocraft Laboratories, Inc.
BRS	Bristol-Myers Co.
BUR	Burroughs-Wellcome Co.
CGY	Ciba-Geigy Corp.
CHO	Cholineco, Inc.
CHT	Chattem, Inc.
CPR	Certified Processing Corp.
DAN	Dan River, Inc., Chemical Products Div.
DOW	Dow Chemical Co.
DPW	Deepwater, Inc.
DUP	E. I. duPont de Nemours & Co., Inc.
EK	Eastman Kodak Co.:
EKT	Tennessee Eastman Co. Div.
FRE	Frank Enterprises, Inc.
FLM	Fleming Laboratories, Inc.
GAF	GAF Corp., Chemical Group
GAN	Gane's Chemicals, Inc.
GNF	General Foods Manufacturing Corp., Maxwell House Coffee Div.
HET	Heterochemical Corp.
HEX	Hexagon Laboratories, Inc.
HFT	Syntex Agribusiness, Inc.
HOF	Hoffmann-LaRoche, Inc.
HXL	Hexcel Corp., Hexcel Chemical Products
HYN	Hynson, Westcott & Dunning, Inc.
IMC	International Minerals & Chemical Corp.
KLM	Kalama Chemical, Inc.
KPT	Koppers Co., Inc.
LEM	Napp Chemicals, Inc.
LIL	Eli Lilly & Co., U.S. and Puerto Rico
LLI	Lee Laboratories, Inc.
MAL	Mallinckrodt, Inc.
MHI	Morton-Thiokol, Inc., Ventron Div.
MON	Monsanto Co.
MRK	Merck & Co., Inc.
NEP	Nepera, Inc.
NES	Ruetgers-Nease Chemical Co.
NOR	Norwich Eaton Pharmaceutical, Inc.
NUT	Nutrius, Inc.
OH	Anaquest
ORG	Organics/LaGrange, Inc.
ORT	Roehr Chemicals, Inc.
PD	Parke-Davis Div. of Warner-Lambert Co.
PEN	CPC International, Inc., Penick Corp.
PFN	Pfanstiehl Laboratories, Inc.
PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
PHR	Pharmachem Corp.
REG	Regis Chemical Co.
RIK	Riker Laboratories, Inc. Sub of 3M Co.
RIL	Reilly Tar & Chemical Corp.
RSA	R.S.A. Corp.
SAL	Salsbury Laboratories, Inc.
SCH	Schering Corp.
SCP	Henkel Corp.
SD	Sterling Drug, Inc.:
SD	Sterling Pharmaceuticals, Inc.
SDH	Hilton Davis Chemical Co.
SDW	Sterling Organics Div.
SFS	Stauffer Chemical Co., Specialty & Intermediates Div.
SHC	Shell Oil Co. Shell Chemical Co. Div.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
SPR	Scientific Protein Laboratories
SRL	G.D. Searle & Co.
TMH	Thompson-Hayward Chemical Co.
TNA	Ethyl Corp.
TRD	Squibb Manufacturing, Inc.
TX	Texaco, Inc., Texaco Chemical Co.
UCC	Union Carbide Corp.
UPJ	Upjohn Co.
VTM	Vitamins, Inc.
WAG	West Design-Chemical, Inc.
WHL	Whitmoyer Laboratories, Inc.
WTL	Pennwalt Corp., Lucidol Div.
WYK	Wyckott Chemical Co., Inc.
WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

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STATISTICAL HIGHLIGHTS

Eric Land
202-523-0491

Flavor and perfume materials are organic chemicals used to impart flavors and aromas to foods, beverages, cosmetics, and soaps. These aroma chemicals are also utilized to neutralize or mask unpleasant odors in industrial processes and products, as well as in consumer products.

Total domestic production of flavor and perfume materials in 1984 amounted to 178.7 million pounds. Sales of these materials in 1984 amounted to 114.7 million pounds, valued at $636.8 million, compared with 111.2 million pounds, valued at $344.8 million, in 1983. These totals do not include benzyl alcohol, which, before 1973, was included in flavor and perfume materials but is now shown in the miscellaneous cyclic section of this series. U.S. production of flavor and perfume materials in 1984 increased by 2.7 percent from the level in 1983 while the quantity of sales increased by 3.2 percent.

Production of cyclic flavor and perfume materials in 1984 amounted to 113.9 million pounds; sales amounted to 83.3 million pounds, valued at $581.6 million. Individual publishable chemicals in the cyclic group produced in the greatest volume in 1984 were anethole and eugenol.

U.S. output of acyclic flavor and perfume materials in 1984 amounted to 64.8 million pounds; sales of these materials amounted to 31.4 million pounds, valued at $55.2 million. Monosodium glutamate was by far the most important of the acyclic chemicals in 1984, although the data are not publishable. Other important acyclic compounds included are linalyl alcohol and geraniol.

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TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1984

[Listed below are all synthetic organic flavor and perfume materials for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all flavor and perfume materials for which data on production and/or sales were reported and identifies the manufacturers of each]

FLAVOR AND PERFUME MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	178,719	114,709	636,802	$5.55
CYCLIC				
Total	113,913	83,287	581,613	6.98
Benzenoid and Naphthalenoid				
Total	98,029	71,794	535,907	7.46
4-Allyl-2-methoxyphenol (Eugenol)	360	288	1,136	3.94
Benzyl propionate	45	...	...	...
Phenethyl isobutyrate	...	6	35	5.96
2-Phenethyl phenylacetate	23	16	106	6.57
Phenylacetaldehyde, dimethyl acetal	140	138	673	4.87
p-Propenylanisole (Anethole)	3,191	3,147	7,664	2.44
All other benzenoid and naphthalenoid materials	94,270	68,199	526,293	7.72
Terpenoid, Metaracyclic, and Acyclic				
Total	15,884	11,493	45,706	3.98
Cedryl acetate	199	...	...	...
Ionones	177	115	1,082	9.37
Methylionone (α and β)	297	168	1,607	9.56
γ-Methylionone	591	384	3,185	8.30
Vetivenyl acetate	30	14	660	47.12
All other terpenoid, heterocyclic, and alicyclic materials	14,590	10,812	39,172	3.62
ACYCLIC				
Total	64,806	31,422	55,189	1.76
Citronellyl acetate	76	62	263	4.22
Citronellyl formate	21	16	121	7.53
3,7-Dimethyl-cis-2,6-octadien-1-ol acetate (Neryl acetate)	25	23	114	4.95
3,7-Dimethyl-6-octen-1-01 (Citronellol)	1,574	1,361	4,662	3.43
Ethyl heptanoate	6	4	20	4.82
Geranyl acetate	207	147	607	4.14
Geranyl butyrate	6	...	...	...
Geranyl formate	16	...	...	...
2-Hexenal	9	7	53	8.01
Isopentyl acetate(Isoamyl acetate	112	...	...	...
Isopentyl butyrate	99	88	185	2.09
Isopentyl isovalerate	24	18	81	4.62
Lauraldehyde	130	83	625	7.58
All other acyclic materials	62,501	29,613	48,458	1.64

[1] Calculated from the unrounded figures.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
BENZENOID AND NAPHTHALENOID:	
2'-Acetonaphthone (β-Methyl naphthyl ketone)	GIV.
1-Acetoxy-2-sec-butyl-1-ethylcyclohexane	GIV, IFF.
p-Allylanisole	SCM, X.
Allyl anthranilate	RT.
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)	CI, X.
*4-Allyl-2-methoxyphenol (Eugenol)	BDS, CI, ELN, GIV, IFF, UNG.
4-Allyl-2-methoxyphenol acetate (Eugenol acetate)	CI, IFF.
α-Amyl cinnamic aldehyde	IFF.
p-Anisaldehyde	GIV, FB, OPC.
Anisole (Methoxybenzene) (Methyl phenyl ether)	OPC.
Anisyl acetate	ELN, GIV.
Anisyl butyrate	RT.
Aurantiol	BDS.
Benzal acetone	FB.
Benzaldehyde glyceryl acetal	GIV.
Benzophenone	CWN, PD.
Benzyl acetate	GIV, MON.
Benzyl benzoate	MON, MRF.
Benzyl cinnamate	FB.
Benzyl butyrate	ELN, FB.
Benzyl formate	ELN.
Benzyl isobutyrate	ELN.
Benzyl isoeugenyl ether	GIV.
Benzyl isopentyl ether	GIV.
Benzyl isovalerate	ELN, FB.
Benzyl laurate	GIV.
Benzyl phenylacetate	ELN, GIV.
*Benzyl propionate	ELN, IFF, FB.
Benzyl salicylate	FB, MON.
p-tert-Butyl-α-methylhydrocinnamaldehyde	GIV, RDA.
3-Butyl phthalide	FB.
1-tert-Butyl-3,4,5-trimethyl-2,6-dinitrobenzene (Musk tibetene)	GIV.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)	GIV.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Carvaeol	GIV.
Cineole (Eucalyptol)	NCI.
Cinnamaldehyde	CI, FB.
Cinnamyl acetate	ELN, FB.
Cinnamyl alcohol	FB.
Cinnamyl butyrate	FB.
Cinnamyl cinnamate	FB, FEL.
Cinnamyl nitrile	IFF.
Cinnamyl propionate	ELN.
Cinnamyl tiglate	FB.
Coumarin	RDA.
Cuminyl acetate	IFF.
Cuminyl alcohol	IFF.
trans-Decahydro-β-naphthol	IFF.
2-4-Dibromo-6-nitro-m-cresyl methyl ether	GIV.
Dihyrocoumarin	ARS.
1,2-Dimethoxy-4-propenylbenzene (4-Propenylveratrol)	FB.
3,7-Dimethyl-2,6-octadienyl phenylacetate (Geranyl phenylacetate)	GIV, SBC.
α,α-Dimethylphenethyl alcohol	IFF.
Dimethyl phenylethyl carbinol	IFF.
Diphenylmethane (Benzylbenzene)	PD.
p-Ethoxybenzaldehyde	GIV.
2-Ethoxynaphthalene	GIV.
Ethyl anthranilate	FB.
Ethyl benzoate	ELN.
Ethyl cinnamate	ELN.
Ethyl-α,β-epoxy-β-methylhydrocinnamate	ELN.
2-Ethyl hexyl salicylate	ELN, FEL, MON.
Ethyl phenylacetate	ELN, GIV, OPC.
Ethyl salicylate	FB.
Geranyl benzoate	GIV.
α-Hexylcinnamaldehyde	CI, IFF.
Hexyl salicylate	IFF.
Hydratropaldehyde	GIV.
Hydratropaldehyde, dimethyl acetal	GIV.
Hydrocinnamic acid	ELN.
Hydrocoumarin	ELN, GIV.

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TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Hydroxycitronellal methyl anthranilate	FB, GIV, IFF.
4-Hydroxy-3-ethoxybenzaldehyde (Ethylvanillin)	RDA.
4-Hydroxy-3-methoxybenzaldehyde (Vanillin)	MON.
4(4-Hydroxy-3-methoxyphenyl)-2-butanone (Vanillyacetone)	GIV.
Isoamyl phenylacetate	KLM.
Isoamyl salicylate	IFF.
Isobutyl benzoate	KLM.
Isobutyl phenylacetate	KLM, FB.
Isobutylquinoline	IFF.
Isobutyl salicylate	FB.
Isopentyl benzoate	GIV.
Isopentyl salicylate	FB, MON.
p-Isopropyl-α-methylhydrocinnamaldehyde (Cyclamen-aldehyde)	GIV, RDA.
l-Limonene	RT.
l-Limonene	SCM.
Linalyl anthranilate	BDS, FMT.
p-Mentha-1,8-diene (Limonene)	IFF.
Menthyl anthranilate	HPC.
o-Methoxy benzaldehyde	FB.
p-Methoxybenzyl alcohol (Anisyl alcohol)	KLM, GIV, OPC.
o-Methoxy annamic aldehyde	FB.
o-Methoxycinnamic aldehyde crystals	CI.
2-Methoxynaphthalene	GIV.
1-p-Methoxyphenyl penten-1-one-3 (α-Methyl-anisylacetone)	GIV.
2-Methoxy-4-propenylphenol (Isoeugenol)	CI, IFF.
2-Methoxy-4-propenylphenol, acetate	KLM.
p-Methylanisole	GIV.
Methyl anthranilate	FB, SW, UNG.
Methyl benzoate	KLM, MRF.
α-Methylbenzyl acetate (Styralyl acetate)	CI.
α-Methylcinnamaldehyde	CI, FB.
Methyl cinnamate	FB.
6-Methylcoumarin	GIV.
p-Methylhydratropaldehyde	GIV.
1-Methyl-isohexyl-hexahydrobenzaldehyde	GIV.
Methyl phenylacetate	KLM, OPC.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Methyl salicylate	DOW, KLM, MON.
Musk 89	IFF.
1,1,3,3,5-Pentamethyl-4,6-dinitroindan (Moskene)	GIV.
α-Pentylcinnamaldehyde	CI, FB.
Phenethyl acetate	BDS, IFF.
Phenethyl alcohol	OPC.
Phenethyl benzoate	IFF.
Phenethyl formate	ELN, IFF.
*Phenethyl isobutyrate	ELN, GIV, IFF.
Phenethyl isovalerate	ELN, FB.
*2-Phenethyl phenylacetate	BDS, ELN, GIV, IFF.
Phenethyl propionate	ELN.
Phenethyl salicylate	GIV.
2-Phenoxyethyl isobutyrate	ELN, IFF.
Phenylacetaldehyde	GIV.
*Phenylacetaldehyde, dimethyl acetal	CI, ELN, GIV.
Phenylacetic acid	GIV.
Phenylacetic acid, isopentyl ester	GIV.
α-Phenylanisole	GIV.
Phenylethyl anthranilate	RT.
Phenylethyl 2-methyl butyrate	SCM.
Phenylethyl tiglate	FB.
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	FB.
3-Phenylpropyl acetate	ELN, GIV.
3-Phenylpropyl cinnamate	FB.
Piperonal (Heliotropin)	AMB.
*p-Propenylanisole (Anethole)	ARZ, FB, HPC, NCI, SCM.
4-Prophenyl-1,2-dimehoxybenzene (Methyl isoeugenol)	CI.
p-Propylanisol (Dihydroanethole)	FB, GIV.
SWEETENERS, SYNTHETIC:	
Aspartame	SFR.
Cyclohexanesulfamic acid, calcium salt (Calcium cyclamate)	ABB.
Cyclohexanesulfamic acid, sodium salt (Sodium cyclamate)	ABB.
Saccharin (1,2-Benzisothiazolin-3-one,-1,1-dioxide)	SW.
Saccharin,calcium salt	ABB.
Saccharin,sodium salt	SW.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
p-Tolualdehyde	FB, GIV.
p-Tolylacetaldehyde	GIV.
p-Tolylacetate	ELN.
p-Tolylisobutyrate	GIV.
p-Tolylphenylacetate	GIV.
Trimethylcyclohexyl salicylate	ARS.
All other benzenoid or naphthalenoid chemicals	IFF.
TERPENOID, HETEROCYCLIC, AND ALICYCLIC:	
Acetoxymethyl-4-nonene	FB.
Acetyl-n-butyryl (2,3-Hexanedione)	FB.
Acetyl cedrene (Vertoflex)	BDS.
Acetyl propionyl (2.3-Pentanedione)	FB.
Allo-ocimene	GIV, IFF, SCM, X.
Allyl cyclohexyl propionate	GIV.
Amyl cyclohexyl acetate	IFF.
Amyris acetate	GIV.
Beta methyl ionone coeur	IFF.
p-tert-Butylclohexylacetate (Verbeniax)	CI, IFF.
2-tert-Butylcyclohexanol	IFF.
p-tert-Butylcyclohexanone	IFF.
2-sec-Butylcyclohexanone	GIV.
Cadinene	FB.
l-Carvone	SCM.
β-Caryophyllene	BDS, GIV, SCM.
Caryophyllene oxide	GIV.
α-Cedrene epoxide (Andrane)	BDS, IFF.
Cedrenol	ELN, IFF.
Cedrol	ELN.
*Cedryl acetate	BDS, ELN, IFF.
Cedryl formate	IFF.
Cyclohexadecen-7-olide	IFF.
Cyclohexyl acetate	RT.
Cyclohexyl butyrate	RT.
2-Cyclohexylcyclohexanone	GIV, IFF.
Dihydro-iso-jasmone	FB.
Dihydronordicyclopentadienyl acetate (Cyclacet)	BDS, CI, IFF.
Dihydronordicyclopentadienyl propionate (Cyclaprop) (Verdyl propionate extra)	BDS, CI.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
TERPENOID, HETEROCYLCIC, AND ALICYCLIC--CONTINUED	
Dihydro terpineol	IFF, SCM.
Dihydroterpinyl acetate	IFF, SCM.
Dimethyl pseudo ionone	FB.
Furfural acetone	RT.
Furfuryl acetate	RT.
Furfuryl isovalenate	RT.
Furfuryl octanoate	RT
Galaxolide (1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta-γ-2-benzopyran)	IFF.
Guaiacwood acetate	ELN, FB, GIV.
Guaiene	FB.
Hexadecanolide	IFF.
2-Hexyl-2-cyclopenten-1-one	FB.
3-Hydroxy-2-ethyl-4-pyrone (Ethylmaltol)	PFZ.
4-Hydroxyhexanoic acid (Lactone)	FB.
4-(4-Hydroxy-4-methyl pentyl)-3-cyclohexene-10-carboxaldehyde (Lyral)	IFF.
3-Hydroxy-2-methyl-4-pyrone (Maltol)	PFZ.
4-Hydroxynonanic acid, γ-lactone (γ-Nonalactone)	ELN, FB.
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)	ELN.
Ionone(α- and β-)	BDS, GIV, NCI.
α-Ionone	BDS, GIV, HOF, IFF.
β-Ionone	BDS, HOF.
Isoamyl furoate	RT.
Isobornyl acetate	NCI, RDA.
Isobornyl methyl ether	SCM.
Isobornyl propionate	ELN.
d-iso-Menthol	SCM.
Isomenthone	GIV.
2-Isopropylcyclohexanol	GIV.
Isopulegyl acetate	GIV.
Jasmal	IFF.
p-Mentha-1,3-diene (α-Terpinene)	SCM.
p-Mentha-1,4-diene (γ-Terpinene)	SCM.
1-p-Mentha-6,8-dien-2-yl acetate (Carvyl acetate)	FB.
p-Menth-8-en-3-ol (Isopulegol)	GIV.
p-Menth-1-en-3-one (Piperitone)	GIV.
p-Menth-4-(8)-en-3-one (Pulegone)	GIV.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
TERPENOID, HETEROCYLCIC, AND ALICYCLIC--CONTINUED	
1-1-p-Menthen-6-yl-1-propanone	GIV.
d-Menthol	HAR, NCI.
dl-Menthol, synthetic	GIV, HAR, SCM.
Menthone	SCM.
Menthyl acetate	FB, GIV.
l-Menthyl acetate	SCM.
Menthyl butyrate	RT.
p-Mentha-6,8-dien-2-O (Carveol)	FB.
p-Mentha-6,8-dien-2-one (Carvone) (Carvol)	FB.
*Methylionone(α- and β-)	GIV, IFF, NCI.
*γ-Methylionone	BDS, GIV, NCI.
6-Methyl-α-ionone	BDS, GIV.
6-Methyl-β-ionone	BDS.
Nopol	NCI.
Nopyl acetate	FEL, NCI.
3-Pentyl tetrahydro-4-pyridine	IFF.
Rose oxide	FB.
α-Santalol	GIV.
β-Santalol	IFF.
α-Santalyl acetate	GIV.
Sassafrass oil, hydrogenated	GIV.
Terpinene-ol	SCM, X.
α-Terpineol	HPC, NCI, SCM.
α-Terpinyl acetate	GIV, IFF, NCI, SCM.
α-Terpinyl propionate	ELN.
3,3,5-Trimethyl cyclohexanol (m-Homomenthol)	ARS, OPC.
1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-1,6-heptadien 3-one (Allyl-α-ionone)	IFF.
Vetivenol	GIV.
*Vetivenyl acetate	BDS, ELN, FB, GIV, IFF.
All other terpenoid, hetercyclic, or alicyclic flavor and perfume chemicals	IFF, SCM.
ACYCLIC	
Acetyl iso-valeryl	FB.
Allyl disulfide	IFF.
Allyl heptanoate	ELN, FB.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/ORSALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Allyl hexanoate	ELN, FB.
Allyl isothiocyanate (Synthetic mustard oil)	OPC.
Allyl isovalerate	RT.
Allyl mercaptan	RT.
Allyl octanoate (Allyl caprylate)	RT.
Allyl sulfide	RT.
Ammonium isovalerate	RSA.
Butter acids	RT.
Butter esters	RT.
Butyl butyryl lactate	ARS, ELN, RT.
Butyl undecylenate	FB, GIV.
α-Butyryl dimethyl succinate	FB.
Citral dimethyl acetal	CI, IFF.
Citronellic acid	HPC.
*Citronellyl acetate	BDS, ELN, GIV, IFF, NCI.
Citronellyl butyrate	GIV.
*Citronellyl formate	BDS, ELN, GIV.
Citronellyl isobutyrate	ELN, GIV, IFF.
Citronellyl nitrile	CI.
Citronellyl propionate	GIV, IFF.
Crude acetate mixture (Linalyl, neryl, gerany acetates, main components)	X.
Crude caryophyllene mixture (α.β.γand isomers)	X.
Decanal (Capraldehyde)	CI, GIV.
Decyl acetate	GIV.
2,5-Dichloro-2,5-dimethyl hexane	FB.
Diethyl acetal	FB.
Diethyl sebacate	ELN.
Diethyl succinate	ELN, MRF.
Dihexyl fumarate	FB.
d-Dihydrocarveol	SCM.
Dihydrocarvone	SCM.
Dihydrolinalool	SCM.
Dihydro myrcenol	IFF.
2,6 Dimethyl-5-hepten-1-al	GIV.
Dimethyl hexanediol	X.
2,5-Dimethyl-3-hexyne-2,5-diol	X.
3,7-Dimethyl-trans-2,6-octadienal (Citral A, Geranial)	BDS, FB, FEL, GIV.
3,7-Dimethyl-2,6-octadienal (Citrals A&B)	NCI, SCM.

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TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)	ELN, FB, GIV, IFF, NCI, SCM.
3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)	ELN, FEL, GIV, IFF, NCI, SCM.
3,7-Dimethyl-1,6-octadien-3-ol (Linalool) (Linalyl alcohol)	ELN, FB, FEL, GIV, IFF, NCI, SCM.
*3,7-Dimethyl-cis-2,6-octadienol, acetate (Neryl acetate)	ELN, GIV, IFF.
3,7-Dimethyl-1,6-octadien-3-ol, acetate (Linalyl acetate)	ELN, FB, GIV, NCI, SCM(E).
3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate)	ELN, GIV.
3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate)	ELN, FB, GIV.
Dimethyloctanal	GIV, IFF, SCM.
3,7-Dimethyloctanol-1 (tetrahydogeraniol)	GIV, NCI, SCM.
3,7-Dimethyl-3-octanol	GIV, SCM.
Dimethyloctanyl acetate	FB.
3,7-Dimethyl-6-octen-1-al (Citronellal)	SCM.
*3,7-Dimethyl-6-octen-1-ol (Citronellol)	ELN, FB, GIV, IFF, NCI, SCM.
3,7-Dimethyl-7-octenol 70%, 6-octenol isomer 30%	GIV.
Dimethyl succinate	FB.
Dimyrcetol	IFF.
Ethylacetate	FB.
Ethyl butyrate	ELN, FB, NW.
Ethyl caprate	ELN, FB.
Ethyl crotonate	RT.
Ethyl formate	FB.
*Ethyl heptanoate	ELN, FB, FEL.
Ethyl hexanoate	ELN, FB, NW.
Ethyl isobutyrate	FB.
Ethyl isovalerate	ELN, FB.
Ethyl laurate	ELN, FB.
Ethyl-2-methyl butyrate	HPC, SCM, X.
Ethyl-2 methyl pentanoate	HPC.
Ethyl myristate	ELN, HPC.
Ethyl nonanoate	ELN, FB.
Ethyl octanoate	ELN, FB.
Ethyl propionate	FB, NW.
Ethyl valerate	ELN.
*Geranyl acetate	BDS, CI, ELN, FEL, GIV, HPC, IFF, NCI, NW.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*Geranyl butyrate	ELN, FB, GIV.
Geranyl crotonate	FB.
Geranyl ethyl ether	IFF.
*Geranyl formate	BDS, ELN, GIV.
Geranyl isobutyrate	IFF.
Geranyl isovalerate	FB.
Geranyl and methyl tiglate	FMT.
Geranyl nitrile (Citralva)	CI, IFF.
Geranyl propionate	ELN, FB.
Geranyl tiglate	FB.
Glutamic acid, monosodium salt (Monosodium glutamate)	SFF.
Glyceryl tripropionate	HPC.
Heptanolide	FB.
Hexaldehyde diethyl acetal	FB.
Hexanoic acid (Caproic acid)	SCM.
*2-Hexenal	CI, FB, GIV, SCM.
2-Hexenol	FB, SCM.
cis-3-Hexen-1-yl acetate	BDS, GIV.
cis-3-Hexenyl benzoate	BDS.
cis-3-Hexenyl butyrate	SCM.
cis-3-Hexenyl isovalerate	SCM.
cis-3-Hexenyl salicylate	BDS.
Hexoxyacetaldehyde dimethyl acetal	FB.
Hexyl caproate	FB.
Hexyl 2-methylbutyrate	SCM.
Hydroxycitronellol	SCM.
7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)	FB, GIV, IFF, OPC, SCM.
7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal)	GIV.
4-Hydroxymethyl-4-nonene	FB.
Hydroxy-2-propanone (Acetol)	FB.
Isobutyl acetate	FB.
Isobutyl butyrate	FB.
Isodecyl neopentanoate	SBC.
*Isopentyl acetate (Isoamyl acetate)	ELN, FB, HPC, MW.
*Isopentyl butyrate	FB, GIV, HPC, MW.
Isopentyl caproate	FB.
Isopentyl caprylate	FB.
Isopentyl formate	ELN, FB, RT.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*Isopentyl isovalerate	ELN, FB.
Isopentyl propionate	FB.
*Lauraldehyde	FB, GIV, SCM.
2-Methylbutyl isovalerate	SCM.
Methyl butynol	X.
3-Methyl butyraldehyde	UCC.
Methyl crotonate	FB, RT.
3-Methyl-5-heptanone oxime	GIV.
Methyl hexyl ether	SCM.
Methyl isobutyrate	HPC.
Methyl isovalerate	FB.
Methyl-2-methyl butyrate	SCM.
3-Methyl-2-[and3]nonene nitrile	GIV.
Methyl-2-nonenoate	RT.
Methyl nonen-3-oate	X.
Methyl-octyl aldehyde	CI.
Methylol methyl hexyl ketone	GIV.
Methyl pentynol	X.
α-Methyl thiopropionaldehyde	RT.
2-Methylundecanal	CI, GIV.
2-Methyl undecanal dimethylacetal	CI.
Myrcenyl acetate	IFF.
Myristaldehyde	GIV.
Nonanal	CI.
1,3-Nonanediol acetate	ELN, GIV.
1,3-Nonanediol diacetate	SBC.
4-Nonene-4-carboxaldehyde	FB.
Nonyl acetate	IFF.
Nonylenic acid	HPC.
Ocimene	IFF.
Octanal	GIV.
Octanal dimethylacetal	CI.
3-Octanol	SCM.
3-Octanone (Ethyl amyl ketone)	GIV.
N-Octyl acetate	ELN, FB.
Octyl formate	FB.
Octyl isobutyrate	FB.
Octyl isovalerate	GIV.
Pseudo linalyl acetate (Neobergamate)	IFF.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Rhodinol	FB, FEL, GIV, IFF.
Rhodinyl acetate	IFF.
Tepyl acetate	KLN.
Tetrahydro-allocimerol	X.
Tetrahydro allo-ocimene	IFF.
1,1,3-Triethoxyhexane	FB.
1,1,3-Triethoxyoctane	FB.
Undecanal	CI, GIV.
9-Undecenal	GIV.
All other acyclic flavor and perfume materials	IFF.

TABLE 3.--FLAVOR AND PERFUME MATERIALS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of flavor and perfume materials to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ABB	Abbott Laboratories
AMB	American Bio-Synthetics Corp.
ARS	Arsynco, Inc.
ARZ	Arizona Chemical Co.
BDS	Biddle Sawyer Corp.
CI	Chem-Fluer, Inc.
CWN	Upjohn Co., Fine Chemical Div.
DOW	Dow Chemical Co.
ELN	Elan Chemical Co.
FB	Fritzsche Dodge & Olcott, Inc.
FEL	Felton International, Inc.
FMT	Fairmount Chemical Co., Inc.
GIV	Givaudan Corp.
HAR	Haarmann & Reimer Corp.
HOF	Hoffmann-LaRoche, Inc.
HPC	Hercules, Inc.
IFF	International Flavors & Fragrances, Inc.
KLM	Kalama Chemical, Inc.
MON	Monsanto Co.
MRF	Morflex Chemical Co., Inc.
NCI	Union Camp Corp., Terpene and Aromatics Div.
NW	Northwestern Chemical Co.
OPC	Orbis Products Corp.
PD	Parke-Davis, Div. of Warner-Lambert Co.
PFZ	Pfizer, Inc.
RDA	Rhone-Poulenc, Inc.
RSA	R.S.A. Corp.
RT	Ritter International
SBC	Scher Chemicals, Inc.
SCM	SCM Corp., Organic Chemicals Div.
SFF	Stauffer Chemical Co., Food Ingredients Div.
SFR	Searle Food Resources, Inc.
SW	Sherwin-Williams Co., Chemical Div.
UCC	Union Carbide Corp.
UNG	Ungerer & Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SECTION VIII -- PLASTICS AND RESIN MATERIALS

STATISTICAL HIGHLIGHTS

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202-523-3709

Plastics and resin materials are high molecular weight polymers which, at some stage in their manufacture, exist in such physical condition that they can be shaped or otherwise processed by the application of heat and pressure. The terms "plastics," "resin," and "polymers," can be (and often are) used interchangeably by the trade. Depending on the chemical composition, manufacturing process, or intended use, the commercial products may contain plasticizers, fillers, extenders, stabilizers, coloring agents, or other additives. There are about 40 to 50 basic plastics and resins which are available commercially. These basic materials are available in literally thousands of individual compounds each with its distincts properties depending on the molecular weight of the resin and the types and amounts of the additives present. Plastics materials may be molded, cast, or extruded into semifinished or finished solid forms. Resin materials may be in the form of solutions, pastes, or emulsions for applications such as protective coatings, adhesives, or paper and textile treatment.

Statistics on U.S. production and sales of synthetic plastics and resin materials for 1984 are given in table 1. U.S. production of plastics and resin materials in 1984 totaled 48,255 million pounds, or 9.0 percent more than the 44,281 million pounds produced in 1983. Sales in 1984 totaled 40,751 million pounds, valued at $20,923 million, compared with 38,075 million pounds, valued at $18,371 million, in 1983.

Thermosetting materials are those which harden with a change in composition in the final treatment so that in their final state as finished articles they are substantially infusible and insoluble; that is, they cannot again be softened by heat or solvents. U.S. production of thermosetting materials totaled 7,997 million pounds in 1984, compared with 7,215 million pounds in 1983. Production of the most important products in 1984 included phenolic (1,656 million pounds), amino (or urea and melamine) resins (1,619 million pounds), polyester resins, unsaturated (1,372 million pounds), and alkyd resins (783 million pounds).

Thermoplastic materials are those which in their final state as finished articles can be repeatedly softened by heat and hardened by a decrease in temperature. U.S. production of thermoplastic materials totaled 40,257 million pounds in 1984 (or 83.4 percent of the total plastics and resin materials output for 1984), compared with 37,065 million pounds in 1983. Production of the most important products in 1984 included polyethylene (15,003 million pounds), polypropylene (5,216 million pounds), vinyl resins (8,292 million pounds), and styrene type materials (6,857 million pounds).

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TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1984

[Quantities and values are given in terms of the total weight of the materials (dry basis). Listed below are all plastics and resin materials, urethane type elastomers, and certain precursors for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all products for which data on production and/or sales were reported and identifies the manufacturers of each]

PLASTICS AND RESIN MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds dry basis[2]	*1,000 pounds dry basis*[2]	*1,000 dollars*	*Per pound*
Grand total	48,254,776	40,750,576	20,922,638	$0.51
THERMOSETTING RESINS				
Total	7,997,278	6,419,946	4,043,544	.63
Alkyd resins, total	783,056	449,841	290,869	.65
Alkyd-acrylate copolymer resins	9,600	...	...	...
Phthalic anhydride type	656,936	382,677	235,250	.61
Polybasic acid type	50,079	30,770	28,196	.92
Styrenated-alkyds or copolymer alkyds	13,066	5,890	3,950	.67
Vinyl toluene alkyds	28,438	26,212	18,351	.70
Other copolymer alkyds	24,939	4,292	5,122	1.19
Epoxy resins:[3] [4]				
Unmodified	445,511	348,485	457,610	1.31
Advanced	(301,073)	(129,989)	(187,697)	(1.44)
Furfuryl type resins	24,432	24,245	18,734	.77
Glyoxal-formaldehyde resins	15,554	9,010	10,372	1.55
Melamine-formaldehyde resins (an amino resin)	229,475	173,607	152,141	.88
Phenolic and other tar acid resins	1,656,299	1,245,999	686,473	.55
Polyester resins, unsaturated[5]	1,371,995	1,308,424	842,557	.64
Polyether and polyester polyols for urethanes[6]	1,542,224	1,210,702	754,700	.62
Polyurethane elastomers and plastics products, total	385,111	268,246	409,257	1.53
Elastomers[7]	216,763	171,484	303,476	1.77
Plastics	168,348	96,762	105,781	1.09
Silicone resins	16,062	13,546	57,644	4.20
Urea-formaldehyde resins (an amino resin)	1,389,991	1,219,871	238,214	.20
Other thermosetting resins[3]	137,566	147,970	124,973	.84
THERMOPLASTIC RESINS				
Total	40,257,498	34,330,630	16,879,094	.49
Acrylic resins, total[9]	1,360,778	953,381	996,194	1.04
Butyl acrylate-ethyl acrylate copolymers resins	27,630	...	...	...
Homopolymer resins, except PMMA, of acrylic or methacrylic acid esters	82,980	17,552	28,677	1.63
Polymethyl methacrylate (PMMA)	503,686	341,856	357,842	1.02
Thermosetting acrylics	130,688	26,418	32,632	1.24
Other acrylics	615,794	567,555	577,043	1.02
Engineering plastics[10]	744,228	541,671	885,992	1.64
Petroleum hydrocarbons resins	292,135	245,519	116,824	.48
Polyamide resins, total	386,296	372,534	566,143	1.52
Nylon type[10] [11]	316,891	309,421	496,619	1.60
Non-nylon type	69,405	63,113	69,524	1.10

See footnote at end of table.

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

PLASTICS AND RESIN MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds dry basis[2]	*1,000 pounds dry basis*[2]	*1,000 dollars*	*Per pound*
THERMOPLASTICS RESINS--Continued				
Polyester resins, saturated, total[9] [12]	1,191,384	902,539	770,425	$0.85
Polybutylene terephthalate, (PBT)	112,872	54,449	78,700	1.45
Polyethylene terephthalate (PET)	1,023,947	801,795	657,324	.82
Other saturated polyesters	54,565	46,295	34,401	.74
Polyethylene resins, total	15,003,227	13,428,392	5,084,857	.38
Ethylene-vinyl acetate and other copolymer resins	382,590	316,114	177,721	.56
Specific gravity 0.940 and below[13]	8,559,395	7,496,690	2,962,810	.40
Specific gravity over 0.940	6,061,242	5,615,588	1,944,326	.35
Polypropylene resins	5,216,443	4,022,896	1,534,552	.38
Polyterpene resins	34,681	36,355	27,629	.76
Polytetrafluoroethylene (PTFE) resins	28,361	22,945	139,425	6.08
Rosin modifications, total	391,125	371,116	187,894	.51
Modified rosin (unesterified)	194,346	186,001	65,693	.35
Modified rosin esters	146,667	137,797	90,433	.66
Rosin esters, unmodified (Ester gums)	50,112	47,318	31,768	.67
Styrene plastics materials, total	6,856,998	5,867,107	3,356,639	.57
Acrylonitrile-butadiene-styrene terpolymer (ABS) resins	1,220,289	1,106,845	925,522	.84
Expandable polystyrene beads	486,874	480,108	284,078	.59
Rubber modified polystyrene	1,406,717	1,397,923	633,236	.45
Straight polystyrene	1,916,593	1,315,177	463,626	.35
Styrene-acrylonitrile copolymer resins (SAN)	658,972	531,911	261,212	.47
All other styrene copolymer resins	311,130	233,516	182,600	.78
Styrene-butadiene latexes	595,805	588,073	388,382	.66
All other styrene latexes	71,957	43,740	32,446	.74
All other styrene plastics materials[14]	188,661	169,814	185,537	1.09
Vinyl resins, total[15]	8,291,936	7,306,868	2,767,335	.38
Polyvinyl acetate[16]	676,948	505,970	299,196	.59
Polyvinyl alcohol[17]	165,746	147,983	124,992	.84
Polyvinyl chloride and copolymers	6,827,541	6,161,105	1,951,904	.32
Polyvinylidene chloride resins, latex type	28,496	26,750	22,738	.85
Vinyl acetate-acrylate copolymers	323,204	286,622	123,221	.43
Other vinyl and vinylidene resins[18]	270,001	178,438	245,284	1.37
All other thermoplastic resins[19]	459,906	259,307	445,185	1.72

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[1] Calculated from unrounded figures.

[2] Dry weight basis unless otherwise specified. Dry weight basis is the total weight of the materials including resin and coloring agents, extenders, fillers, plasticizers, and other additives, but excluding water and other liquid diluents unless they are an integral part of the materials.

[3] Includes reactive diluents which are an integral part of the resin. Excludes the weight of hardeners sold in association with the resin as part of a two-component system.

[4] Data shown for advanced epoxy resins are that part of the unmodified epoxy resins which is further processed; therefore, the total in parentheses are not included in the grand total.

[5] Polyester resins are unsaturated alkyd resins, later to be copolymerized with a monomer (Such as styrene or methyl methacrylate), and polyallyl resins (such as diallyl phthalate and diglycol carbonate). Data are on an "as sold" basis, including monomer if part of the resin system.

[6] In addition to the polyols, the other principal starting materials used in the production of urethane products are the isocyanic acid derivatives, mainly the 80/20 mixture of toluene-2,4- and 2,6-diisocyanate. Statistics for the isocyanic acid derivatives are reported in the "Cyclic Intermediates" section of the Synthetic Organic Chemicals report.

[7] The data on urethane elastomers are believed to be not fully representative of the total urethane market in view of the very large number of urethane elastomer producers.

[8] Includes acetone-formaldehyde resins, dicyandiamide resins, polybutadiene resins, thiourea resins, and certain other thermosetting resins.

[9] Does not include production or sales for fiber use.

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FOOTNOTES--CONTINUED

[10] Engineering plastics: Includes acetal, polycarbonate, polyimide and amide-imide polymers, polyphenylene oxide, polyphenylene sulfide and polysulfone. Engineering plastics are defined in Whittington's Dictionary of Plastics, as "All plastics, with or without fillers or reinforcements, which have mechanical, chemical and thermal properties suitable for use in construction, machine components and chemical processing equipment." The above list of plastics (all of which are thermoplastic) was selected from a larger group in this source. Certain other plastics named in Whittington's Dictionary as engineering plastics, such as ABS resins, acrylic resins, and nylon resins, are not included in the above list as they are published separately.

[11] Statistics for nylon 6 and nylon 6/6 which are used in plastics applications (e.g., molding, etc.) are included here.

[12] Statistics are included here for polyethylene terephthalate used in plastics applications (e.g., molding, etc.) Statistics also are included here for production only when the starting materials are converted directly to a finished product(i.e., "in situ" production), polyester film and tape are examples of such a conversion.

[13] Combines conventional low density polyethylene resins with linear low density polyethylene resins.

[14] Includes data for α-methyl styrene polymers, p-methyl styrene polymers, methyl methacrylate-butadiene-styrene (MBS) resins, styrene-allyl alcohol copolymer resins, styrene-divinylbenzene copolymer resins, styrene-maleic anhydride copolymers resins, styrene-methyl methacrylate copolymers resins, and other styrene type plastics material.

[15] Data are on the basis of dry resin content, excluding the weight of plasticizers, extenders, fillers coloring agents, stabilizers, or impact modifiers, unless otherwise noted.

[16] Data for polyvinyl acetate produced and sold in latex form includes the weight of any protective colloids which are used as emulsion stabilizers and form an integral part of the resin system. Production and sales do not include polyvinyl acetate used as a reactive intermediate for polyvinyl alcohol or other vinyl resins.

[17] Production and sales do not include polyvinyl alcohol used as a reactive intermediates for polyvinyl butyral or other vinyl resins.

[18] Includes polyvinyl butyral, polyvinyl formal, polyvinylidene chloride (solid type), and other vinyl resins.

[19] Includes cellulose plastics, coumarone-indene resins, fluorocarbon resins (except PTFE), polybutylene type resins, polyphenyl aromatic ester resins, and other thermoplastic materials.

Note.--Data reported to the U.S. International Trade Commission do not necessarily coincide with that reported to the Society of the Plastics Industry (SPI) because of differences in both the reporting instructions and in the coverage of certain resins.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOSETTING RESINS	
Acetone-formaldehyde resins	ACY, DRR, GP.
*ALKYD RESINS:	
*Alkyd-Acrylate copolymer resins	FRE, KMC, MMP, OBC, PPG, SCM.
Alkyl phenol	X.
*Phthalic anhydride type alkyd resins	ACO, ASH, AZS, BAK, BAL, BEN, BFF, BLC, BRU, CCC, CEI, CEL, CGL, CJO, CPV, DEG, DRC, DSO, DUP, EMP, EW, FJI, FMO, FOC, GAI, GEI, GRV, HAN, ICF, JOB, JSC, KMC, KMP, LIC, MCC, MID, MMP, NCP, OBC, PER, PPG, PRT, QCP, RCI, REL, SCM, SCN, SDH, SKT, SM, SRY, SW, TMA, UNO, USS, VSP, X, X.
*Polybasic acid type alkyd resins	ACY, BEN, CJO, CPV, DEG, DSO, EW, FJI, FOC, FRE, GAI, GEI, GRV, HAN, ICF, IOV, MCC, OBC, PPG, RCI, REL, SCM, SCN, SKT, SW.
*Styrenated-alkyds, or copolymer alkyds	ACY, BLC, CJO, CPV, DSO, EW, FRE, GEI, GRV, HAN, JOB, MCC, MID, MMP, MRT, OBC, REL, RUO, SCM, SW, VSP.
*Vinyl toluene alkyds	BLC, CGL, CPV, CSD, FJI, FRE, GEI, JOB, MCC, MMP, OBC, PPG, PRT, REL, SCM, SW.
Alkyd copolymers, all other	CGL, DEG, EMP, GEI, MCC, PPG, SW.
Dicyandiamide resins	APX, ECC, JSC, S(E), SMW, STC, VPC.
AMINO RESINS:	
*Melamine-formaldehyde resins	ACY, AUX, BOR, CBD, CEL, CGL, CPV, DGO, DRC, GAI, GP, GRV, HAN, JSC, LIC, MID, MMP, MON, NVM, OCF, PLS, PMC, PPG, PPL, PST, RCI, REL, SCM, SMW, STC, VSP, WPG, WRD, X.
Thiourea resins	CMP.
*Urea-formaldehyde resins	ACY, APX, AUX, BOR, CBD, CCC, CEL, CGL, CMP, CPV, DAN, DSO, GAF, GP, GRV, JSC, MMM, MON, PKI, PMC, PPG, PPL, PST, RBI, RCI, REL, SAC, SM, SMW, SOR, VAL, VPC, VSP, X.
Amino resins, all other	BAK.
EPOXY RESINS:	
*Epoxy,resins advanced	ASH, BEN, CEL, CGL, CGY, CJO, CNI, DSO, EMP, EW, FMO, GAI, GE, GRV, ICF, MCC, MID, MIL, MMM, MRT, OCF, PPG, RCI, SCM, SCN, SW, VSP.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOSETTING RESINS--CONTINUED	
EPOXY RESINS--Continued	
*Epoxy,resins unmodified	ADC, AZS, CEL, CGY, CLU, CMP, DOW, DSO, ICF, JOB, PPG, PRT, RCI, SHC, UCC, VSP, X.
*Furfuryl type resins	ACR, CEI, CLU, DRR, HVG, NCP, UNO, WRD.
*Glyoxal-formaldehyde resins	AUX, CMP, RBI, RBI, SNW, WPG.
*Phenolic and other tar acid resins	ABS, ACR, ASH, BAK, BME, BOR, BSC, CBD, CEI, CLK, CLU, CPV, DRC, DRR, DSO, EW, GE, GEI, GP, GRG, HER, HKD, HPC, HVG, ICF, INL, IRI, KPT, MCA, MID, MMM, MON, NCI, NCJ, NCP, NTC, NVM, OBC, OCF, PAI, PKI, PLS, PPG, PPL, PSL, PYZ, RAB, RCI, RH, SIM, SKT, SPL, STC, SW, UCC, UNO, USR, VPC, VSV, WCA, WRD, X.
Polybutadiene resins	ATR, CCS, CNI, CRS, LC, SCN.
*POLYESTER RESINS, UNSATURATED, AND ALLYL RESINS:	
Allyl resins	DRC, FMC, GEI, MCC.
Diallyl isophthalate	FMC, GEI.
Polyester resins, unsaturated	ACS, ACY, ADC, APH, ASH, AZS, CGL, CJO, CPV, DOW, DSO. ENP, EW, FJI, FRE, GEI, GRG, ICF, ICI, IPC, KPT, MCC, MID, MRT, OCF, PPG, PPL, RCI, SCM, SDH, SIC, SLC, SW, UCC, USS, VSP.
*Polyether and polyester polyols for urethanes	ARK, BAS, BPT, CHC, CJO, CPV, CXI, DOW, FRE, ICI, JOB, MCC, MID, MMM, MOB, MRT, NCP, OCF, OMC, PPG, RCI, RUO, SHX, SKT, TX, UNO, UPJ, WLN, WM, WTC.
*POLYURETHANE ELASTOMER AND PLASTIC PRODUCTS:	
*Polyurethane elastomers	ACY, ADC, ARO, BFG, BMC, BPT, CAS, CNI, CWN, DA, DCC, DNS, DRC, EEP, EPI, GRD, HXL, ICF, INP, MMM, MOB, MON, MRT, PLN, PPG, PRC, PYI, RUO, SBG, SLC, UPJ, USR, WTC.
*Polyurethane resins	ACO, CGL, DSO, DUP, ENP, EW, FRE, GEI, HYC, INP, LC, MCC, MID, MOB, OMC, PEL, PVI, QUN, RBI, RCI, SCM, SCN, SW, UPJ, USM, WTC.
*Silicone resins	ARA, CJO, DCC, JOB, LIC, MCC, PEL, SCM, SPD, VPS.
Thiourea-formaldehyde resins	APX.
Thermosetting resins,benzenoid, all other	ACY, BAK, BAS, DEG, DRC, DSO, ENP, MCC, MID, REL, SCM, SM, VAL, VSP, WPG.
Thermosetting resins,nonbenzenoid, all other	BAK, S(K).

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS	
*ACRYLIC RESINS:	
COPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS:	
*Butyl acrylate-ethyl acrylate copolymer resins	DSO, QUN, RH, SNW, SYT, UOC, VAL.
Butyl methacrylate-ethyl methylacrylate copolymer resins	UOC, WTC.
Ethyl acrylate	DSO.
2-Ethylhexyl acrylate-methy acrylate copolymer resins	DSO, SYT, UOC.
Lauryl methacrylate-stearyl methacrylate copolymer resins	TX.
Other copolymer resins of acrylic and/or methacrylic acid esters	ACO, AZS, BPT, DRB, DRC, DSO, FLH, FMO, GAF, GLC, ICF, JNS, JSC, MID, NSC, OBC, PPG, PRT, PYI, RH, SCP, SH, UCC, WTC.
Ethyl acrylate butyl acrylate copolymer	VAL.
HOMOPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS:	
*Homopolymer resins of acrylic or methacrylic acid esters, except PMMA	CPV, CYR, DA, DUP, GLC, GRV, ICF, PVI, PYI, RH, SAR, SW, UOC.
*Polymethyl methacrylate (PMMA)	CTP, CYR, DUP, ICF, IOC, JOB, MRT, PKL, PPG, PTC, PVI, RH, SAR, SNW, SYT, USS, WTC.
Polyethyl methacrylate	TX.
*Thermosetting acrylate resins	ACY, AZS, CEL, CHP, CPV, DA, DSO, DUP, EFH, FMO, FRE, GAI, GRV, HAN, ICF, LIC, MCC, MID, PPG, SCM, VSP.
CELLULOSE PLASTICS AND RESINS:	
Cellulose acetate	EKT.
Cellulose acetate butyrate	EKT.
Cellulose acetate propionate	EKT.
Ethyl cellulose	X.
Cellulose plastics,all other	DOW, DUP.
Coumarone-indene resins	HPC, NEV.
*ENGINEERING PLASTICS:	
Acetal resins	CEL, DUP, MCC, MNP, PPG, RAS, WPG.
Polycarbonate resins	DOW, GE, MOB, PPG.
Polyimides and amide-imide polymers	AMO, DUP, EW, GE, PDI.
Polyphenylene oxide type resins	GE.
Polyphenylene sulfide resins	PLC.
Polysulfone resins	UCC.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
FLUOROCARBON RESINS:	
*Polytetrafluoroethylene (PTFE)	ACS, DUP, ICI.
Polyvinylidene fluoride resin	PAS.
Fluorocarbon resins,all other	DUP.
*Petroleum hydrocarbon resins	BLC, CFX, CXI, EKX, ENJ, GYR, HPC, ICF, LII, NEV, RCI, X.
Phenoxy (R) resin (other than for coating and adhesives)	UCC.
*POLYAMIDE RESINS:	
*Non-nylon type, polyamide resins	COO, EFH, EMR, ENJ, HYC, LII, MCC, MON, NCI, PAC, S(E), SCP, SM, SNW, USM.
*Nylon type ,polyamide resins	ACS, AGI, BCM, CEL, CTR, DGO, DUP, MON, RSN, SCP, USM.
Polybutylene type resins	SHC.
*POLYESTER RESINS, SATURATED:	
*Polybutylene terephthalate(PBT)	AGI, CEL, GAF, GE, USM.
*Polyethylene terephthalate (PET)	COO, DUP, EK, EKT, GEI, GYR, HST, ICI, MMM, MRT, SNW, USM.
*Polyester resins, saturated, all other	BPT, CPV, DUP, EKT, FMO, GAI, HYC, ICI, LII, MNP, PPG, SCM, UCC.
*POLYETHYLENE AND COPOLYMERS RESINS:	
*Ethylene-vinyl acetate (EVA) copolymer resins	CPX(E), DOW, ENJ, NSC, USI.
*Other ethylene copolymer resins	EKT, EKX, PPG, SNW.
*Specific gravity 0.940 and below	ACS, CPX(E), DOW, DUP, EKX, ELP, ENJ, GOC, HIM, NWP, SM, SNW, UCC, USI, X.
*Specific gravity 0.940 and below	ENJ, NWP, PLC, SM, USI.
*Specific gravity over 0.940	ACS, AMO, CPX(E), DOW, DUP, ENJ, GOC, HST, PLC, SLT, UCC, USI.
Polyphenyl aromatic ester resins	HPC, MON.
*Polypropylene polymer and copolymer resins	AMO, CSD, EKX, ELP, ENJ, GOC, HIM, MIL, NWP, PLC, SHC, SLT, USS.
*Polyterpene resins	ARZ, HPC, RCI, SCN.
*ROSIN MODIFICATIONS:	
*Modified rosin (Unesterified)	ARZ, CJO, DPP(E), HPC, MON, NCI, SYL.
*Modified rosin esters	AZS, BAK, DPP(E), EW, FJI, FRP, GRV, HPC, MCC, NCI, RCI, SCM, STC, SW, SYL.
*Rosin esters, unmodified (Ester gums)	ARZ, DPP(E), FRP, HPC, LII, NCI, PRT, RCI, SYL.
*STYRENE TYPE PLASTICS MATERIALS:	
*Acrylonitrile-butediene-styrene (ABS) terpolymer resins	DOW, GRD, GYR, HCB, MON.
p-Methyl styrene polymers	SM.

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TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
STYRENE TYPE PLASTICS MATERIALS--Continued	
-Methyl styrene polymers	AMO.
*Styreno-acrylonitrile copolymer resins (SAN)	BFG, CSD, DOW, MCB, MON, RCI, SM.
POLYSTYRENE:	
*Expandable polystyrene beads	ATR, BAS, CSD, HST, MRT, TXS, VIT.
*Rubber modified polystyrene	API, CSD, DOW, DPI, HST, MON, PLR, SM.
*Straight polystyrene	AEP, AMO, ATR, CSD, DOW, DPI, GAF, GOC, HGC, HST, KTP, MMM, MON, PLR, SM, TXS.
STYRENE LATEXES:	
*Styrene-butadiene latexes	DOW, GNT, GRD, GYR, PLR, PYI, UOC.
*Styrene latexes, all other	ADC, DOW, GNT, GRD, MCC, MON, PVI, UCC, UOC.
*OTHER STYRENE COPOLYMERS:	
*Methyl methacrylate-butadiene-styrene (MBS) resins	CYR, RH.
Styrene-allyl alcohol copolymer resins	HPC.
Styrene-divinylbenzene copolymer resins	RH.
Styrene-maleic anhydride copolymer resins	ATR, MON.
Styrene-methyl methacrylate copolymer resins	MCC, RCD.
*Styrene copolymers, all other	ARZ, BFG, DOW, DSO, DUP, EMP, GYR, IOC, JNS, MON, PLC, PPG, RCD, X.
*Styrene type plastics materials,all other	JNS.
*VINYL RESINS:	
*Polyvinyl acetate resins	AIP, AZS, BOR, DAN, DSO, FJI, FLH, FLN, GLC, GRD, JOB, JSC, KMP, MNP, MON, NSC, PYI, RCI, RPC, SCM, SCO, SNW, UCC, UOC, X, X.
*Polyvinyl alcohol resins	AIP, AZS, DUP, MON.
Polyvinyl butyral resins	DUP, MON.
Polyvinyl formal resin	EW, MON.
*Vinyl acetate-acrylate copolymers	ACO, DSO, FLN, MCC, NCJ, NTC, OBC, PYI. SCM, SNW, SPC, UCC, UOC.
*POLYVINYL CHLORIDE AND COPOLYMER RESINS:	
Polyvinyl chloride copolymer resins, all other	BFG, CNI, GNT, HKP, HN.
Polyvinyl chloride homopolymer resins	AIP, BFG, BOR, CNT, FOR, GNT, GP, HKP, HN, KYS, MIL, PNT, SHT, UCC, VST.
Vinyl chloride-acetate copolymer resins	MCC.
POLYVINYLILINE CHLORIDE RESINS:	
*Latex type polyvinylidene chloride resins	BFG, DOW, GRD, MRT, UOC.
*Vinyl resins, all other	DOW, DSO, DUP, NTC, RH, SCM, UCC.
*Thermoplastic resins, all other	DPP(E), DUP, MON, MRT, SW, UOC.

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of plastics and resin materials to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ABS	Abex Corp., Friction Products Div..-U.S.
ACR	CPC International, Inc., Acme Resin Corp.
ACO	Adco Chemical Co.
ACY	American Cyanamid Co.
ADC	Anderson Development Co.
AEP	A & E Plastics Corp.
ACS	Allied Corp., Chemical Section
AGI	EMS-American Grilon, Inc.
AIP	Air Products & Chemicals, Inc.
AMO	Standard Oil Co. (Indiana)
APH	The Alpha Corporation of Tennessee
API	Asoma Polymers, Inc.
APX	Apex Chemical Co., Inc.
ARA	Syntex Chemical, Inc.
ARK	Armstrong World Industries, Inc.
ARO	Arnco
ARZ	Arizona Chemical Co.
ASH	Ashland Oil, Inc.
ATR	Atlantic Richfield Co., Arco Chemical Co.
AUX	Auralux Corp.
AZS	AZS Corp. & AZS Chemical Corp.
BAK	Baker International - Magna Corp.
BAL	Sherwin-Williams Co., Consumers Div.
BAS	BASF Wyandotte Corp.
BCM	Belding Chemical Industries
BEN	Bennett Paint and Glass
BFF	Beatrice Foods Co., Farboil Co. Div.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group
BLC	Ranbar Technology, Inc. d/b/a Ball Chemical Co.
BMC	Brin-Mont Chemicals, Inc.
BME	Allied Bendix Corp., Friction Materials Div.
BOR	Borden, Inc., Borden Chemical Div.
BPT	Beatrice Foods Co., Permuthane Div.
BRU	M. A. Bruder & Sons, Inc.
BSC	Cascade Resins, Inc.
CAS	Caschem, Inc.
CBD	Chembond Corp.
CCC	C.N.C. Chemical Corp.
CCS	Colorado Chemical Specialties, Inc.
CEI	Combustion Engineering, Inc., C-E Cast Products
CEL	Celanese Corp.:
	Celanese Engineering Resin
	Celanese Specialty Resins
CFX	Chemfax, Inc.
CGL	Cargill, Inc.
CGY	Ciba-Geigy Corp.
CHC	Carpenter Chemical Co.
CHP	C. H. Patrick & Co., Inc.
CJO	C. J. Osborn Chemicals, Inc.
CLK	Clark Oil & Refining Corp.
CLU	Core-Lube, Inc.
CMP	Commercial Products Co., Inc.
CNI	Conap, Inc.
CNT	Certainteed Corp.
COO	The Terrell Corp.
CPV	Cook Paint & Varnish Co.
CPX	Chemplex Co.
CRS	Colorado Resins, Inc.
CSD	Cosden Oil & Chemical Co.
CTP	Continential Polymers, Inc.
CTR	Custom Resins Div. of Bemis Co., Inc.
CWN	Upjohn Co., Fine Chemical Div.
CYR	CYRO Industries
CXI	Chemical Exchange Industries, Inc.
DA	Diamond Shamrock Corp., Chemicals Co.
DAN	Dan River, Inc., Chemical Products Div.
DCC	Dow Corning Corp.
DEG	Degen Oil & Chemical Co., Inc.
DGO	Day-Glo Color Corp.
DNS	Dennis Chemical Co.
DOW	Dow Chemical Co.
DPI	Dart Polymers, Inc. Sub of Dart Container Corp.
DPP	Dixie Pine Chemicals, Inc.
DRB	The Derby Co., Inc.
DRC	Dock Resins Corp.
DRR	Delta Resins & Refractories
DSO	DeSoto, Inc.
DUP	E. I. duPont de Nemours & Co., Inc.
ECC	Eastern Color & Chemical Co.
EEP	Eaton Corp., Industrial Polymer Product Div.
EFH	E. F. Houghton & Co.
EK	Eastman Kodax Co.:
EKT	Tennessee Eastman Co. Div.
EKX	Texas Eastman Co. Div.
ELP	El Paso Products Co.
EMR	Emery Chemicals Div. of National Distillers & Chemical Corp.
ENJ	Exxon Chemical Americas
ENP	Insilco Corp., Enterprise Companies Div.
EPI	Eagle Pitcher Industries, Ohio Rubber Co. Div.
EW	Westinghouse Electric Corp., Insulating Materials Div.
FJI	Foy-Johnston, Inc.
FLH	H. B. Fuller Co.
FLN	Franklin International
FMO	Ford Motor Co., Paint Plant
FMC	FMC Corp.
FOC	Handschy Industries, Inc., Farac Varnishes & Chemicals
FOR	Formosa Plastics Corp. - U.S.A.
FRE	Freeman Chemical Corp.
FRP	FRP Co.
GAF	GAF Corp., Chemical Group
GAI	Glasurit America, Inc.
GE	General Electric Co.:
GEI	Insulting Materials
GLC	General Latex & Chemical Corp.
GNT	Gencorp Polymer Div.
GOC	Gulf Oil Corp., Gulf Oil Products Co.
GP	Georgia-Pacific Corp.:
	Plaquemine Div.
	PVC Compound Div.
	Resins Operations

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1984--Continued

CODE	NAME OF COMPANY
GRD	W. R. Grace & Co., Polymers & Chemical Div.
GRG	P. D. George Co.
GRV	Guardsman Chemicals, Inc.
GYR	Goodyear Tire & Rubber Co.
HAN	Hanna Chemical Coating Corp.
HER	Heresite-Saekaphen, Inc.
HGC	Goodson Chemical Corp.
HIM	Himont U.S.A., Inc.
	Occidental Chemical Corp.:
HKD	Durez Div.
HKP	PVC Div.
HN	Tenneco Polymer, Inc.
HPC	Hercules, Inc.
HST	American Hoechst Corp.:
	Hoechst Fiber Industries Div.
	Petrochemicals/Plastics Group
	Plastics Div.
HVG	Ametek, Inc., Haveg Div.
HXL	Hexcel Corp., Hexcel Chemical Products
HYC	Dexter Corp., Hysol Div.
ICF	Inmont Corp.
ICI	ICI Americas, Inc. & Chemicals Div.
INL	Van Leer Containers, Inc.
INP	Synair Corp.
IOC	Sybron Chemical, Inc.
IOV	Iovite, Inc.
IPC	Interplastic Corp.
IRI	Ironsides Co.
JNS	S. C. Johnson & Son, Inc.
JOB	Jones-Blair Co.
JSC	Sybron Chemical, Inc.
KMC	Komac Paint, Inc.
KMP	Kelly-Moore Paint Co., Inc.
KPT	Koppers Co., Inc.
KTP	Kent Polymers, Inc.
KYS	Keysor Corp.
LC	Lord Corp., Chemicals Products Group
LIC	Lilly Industrial Coatings, Inc.
LII	Lawter International, Inc.
MCA	Masonite Corp., Alpine Div.
MCB	Borg-Warner Corp., Borg-Warner Chemicals
MCC	McCloskey Corp., McCloskey Varnish Co.
MCC	McCloskey Varnish Co. of the N.W.
MCC	McCloskey Varnish Co. of the West
MID	Dexter Corp., Midland Div.
MIL	Milliken & Co., Milliken Chemicals Co.
MMM	Minnesota Mining & Manufacturing Co.
MNP	McWhorter, Inc.
MOB	Mobay Chemical Co., Pittsburgh Div.
MON	Monsanto Corp.
MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
NCI	Union Camp Corp., Chemical Products Div.
NCJ	National Casein of New Jersey
NCP	Niles Chemical Paint Co. and Kordell Industries Div.
NEV	Neville Chemical Co.
NSC	National Starch & Chemical Corp.
NTC	National Casein Co.
NVM	Nevamar Corp.
NWP	Northern Petrochemical Co.
OBC	O'Brien Corp.
OCF	Owens-Corning Fiberglas Corp.
OMC	Olin Corp.
PAC	Pacific Anchor Chemical Corp.
PAI	Polymer Applications, Inc.
PAS	Pennwalt Corp.
PDI	Phelps Dodge Industries, Inc., Phelps Dodge Magnet Wire Co. Div.
PEL	Pelron Corp.
PER	Perry & Derrick Co., Inc.
PKI	Perkins Industries, Inc.
PKL	Plaskolite, Inc.
PKP	Plaskon Products, Inc.
PLC	Phillips Petroleum Co.
PLN	Disogrin Industries Corp.
PLR	Polysar, Inc.:
	Latex Div.
	Resins Div.
PLS	Plastics Engineering Co.
PMC	Plastics Manufacturing Co.
PNT	Pantasote, Inc., Film/Compound
PPG	PPG Industries, Inc.
PPL	Pioneer Plastics Div. of LOF Plastics, Inc.
PRC	Products Research & Chemical Corp.
PRT	Pratt & Lambert, Inc.
PSL	Plaslok Corp.
PST	Perstorp Compounds, Inc.
PTC	Polycast Technology Corp.
PVI	Polyvinyl Chemical Industries
PYI	Polymer Industries
PYZ	Polyrez Co., Inc.
QCP	Quaker Chemical Corp.
QUN	K. J. Quinn & Co., Inc.
RAB	Raymark Corp.
RAS	Raffi and Swanson, Inc.
RBI	Reeves Brothers, Inc.
RCD	Richardson Polymer Corp.
RCI	Reichhold Chemicals, Inc.
REL	Reliance Universal, Inc., Louisville Resins Operations
RH	Rohm & Haas Co.
RPC	Millmaster Onyx Group, Lyndall Chemical Co. Div.
RSN	Rilsan Corp.
RTC	Riegel Textile Corp., Riechem Div.
RUO	Ruco Polymers Corp.
S	Sandoz, Inc., Colors & Chemicals Div.
SAC	Southeastern Adhesives Co.
SAR	Leski, Inc.
SBG	Samuel Bingham Co.
SCM	SCM Corp., Coatings & Resins Div.
SCN	Schenectady Chemicals, Inc.
SCO	Scholler, Inc.
SCP	Henkel Corp.
SDH	Sterling Drug, Inc., Hilton Davis Chemical Co. Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SHT	Shintech, Inc.
SHX	Sherex Chemical Co., Inc.
SIC	Sohio Chemicals Co., Silmar Div.
SIM	Simpson Timber Co.

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1984--CONTINUED

CODE	NAME OF COMPANY
SKT	Textron, Inc., Spencer Kellogg Div.
SLC	Soluol Chem Co., Inc.
SLT	Soltex Polymer Corp.
SM	Mobil Oil Corp.: Mobil Chemical Co.: Chemical Coatings Div. Petrochemical Div.
SNW	Sun Chemical Corp., Chemicals Div.
SOR	MW Manufacturers, Inc., Southern Resin Div.
SPC	Insilco Corp., Sinclair Paint Co. Div.
SPD	General Electric Co., Silicone Products Dept.
SPL	Spaulding Fiber Co., Inc., Industrial Plastics Div.
SRY	Synray Corp.
STC	American Hoechst Corp., Sou-Tex Works
SW	Sherwin-Williams Co., Chemical Div.
SYL	Sylvachem Corp.
SYT	Synthron, Inc.
THA	Ethyl Corp.
TX	Texaco, Inc., Texaco Chemical Co.
TXS	Texstyrene Plastics, Inc.
UCC	Union Carbide Corp.
UNO	United-Erie, Inc.
UOC	Union Oil Co. of California
UPJ	Upjohn Co. and Polymer Chemical Div.
UPS	Upjohn Co.
USI	National Distillers & Chemical Corp.: U.S. Industrial Chemicals Co.: National Petro Chemical Corp.
USM	Emhart Corp., Bostik U.S. Div.
USR	Uniroyal, Inc., Chemical Group
USS	U.S. Steel Corp., USS Chemicals Div.
VAL	United Merchants & Manufacturers, Inc., Valchem Div.
VIT	Vititek Corp.
VPC	Mobay Chemical Corp., Dye & Pigment Div.
VSP	The Valspar Corp.
VST	Vista Polymers, Inc.
VSV	Valentine Sugars, Inc., Valite Div.
WCA	West Coast Adhesives Co.
WLN	Wilmington Chemical Corp.
WM	Inolex Chemical Co.
WPG	West Point-Pepperell, Inc., Grifftex Chemical Co. Sub.
WRD	Weyerhaeuser Co.
WTC	Witco Chemical Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

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STATISTICAL HIGHLIGHTS

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Rubber-processing chemicals are organic compounds that are added to natural and synthetic rubber to give them qualities necessary for their conversion into finished rubber goods. In this report, statistics are given for cyclic and acyclic compounds by use--such as accelerators, antioxidants, and vulcanizing agents. Data on production and sales of rubber-processing chemicals in 1984 are given in table 1.[1]

Production of rubber-processing chemicals as a group in 1984 amounted to 288 million pounds, or 2 percent less than the 293 million pounds produced in 1983. Sales of rubber-processing chemicals in 1984 amounted to 176 million pounds, valued at $287 million, compared with 203 million pounds, valued at $312 million, in 1983.

The production of cyclic rubber-processing chemicals in 1984 amounted to 260 million pounds, or 6 percent more than the 246 million pounds produced in 1983. Sales of cyclic rubber-processing chemicals in 1984 totaled 154 million pounds, valued at $261 million, compared with 163 million pounds, valued at $279 million, in 1983. Of the total production of cyclic rubber-processing chemicals in 1984, antioxidants, antiozonants, and stabilizers accounted for 62 percent, and accelerators, activators, and vulcanizing agents for 34 percent. Production of antioxidants, antiozonants, and stabilizers, which amounted to 161 million pounds in 1984, included 98 million pounds of amino compounds and 63 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants, antiozonants, and stabilizers in 1984 amounted to 57 million pounds, valued at $87 million; sales of phenolic and phosphite antioxidants, antiozonants, and stabilizers were 38 million pounds, valued at $61 million.

Production of acyclic rubber-processing chemicals in 1984 amounted to 28 million pounds, or 40 percent less than the 46 million pounds produced in 1983. Sales in 1984 totaled 22 million pounds, valued at $26 million, compared with 40 million pounds, valued at $33 million, in 1983. Dithiocarbamic acid derivatives accounted for 20 percent of the production of acyclic rubber-processing chemicals in 1984.

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[1] See table 2, which lists these products and identifies the manufacturers by codes. These codes are given in table 3.

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TABLE 1.--RUBBER PROCESSING CHEMICALS: U.S. PRODUCTION AND SALES

[Listed below are all rubber-processing chemicals for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all rubber-processing chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

RUBBER-PROCESSING CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand Total	287,579	175,909	286,509	$1.63
CYCLIC				
Total	259,777	153,960	260,701	1.69
Accelerators, activators, and vulcanizing agents total	89,578	49,579	81,767	1.65
Thiazole derivatives, total	80,269	42,765	62,719	1.47
2,2'-Dithiobis[benzothiazole]	7,755	6,892	8,548	1.24
2-Mercaptobenzothiazole	...	6,531	5,671	.87
All other thiazole derivatvies	72,514	29,342	48,500	1.65
All other accelerators, activators, and vulcanizing agents[2] [3]	9,309	6,814	19,048	2.80
Antioxidants, antiozonants, and stabilizers, total	160,706	95,775	148,594	1.55
Amino compounds, total	98,023	57,434	87,109	1.52
Substituted p-phenylenediamines	57,944	30,266	48,806	1.61
All other amino compounds[4]	40,079	27,168	38,303	1.41
Phenolic and phosphite compounds, total	62,683	38,341	61,485	1.60
Phosphites	48,509	...	...	...
Polyphenolics (including bisphenols)	6,640	7,846	22,244	2.84
All other phenolic and phosphite compounds	7,534	30,495	39,241	1.29
All other cyclic rubber-processing chemicals[6]	9,493	8,606	30,340	3.53
ACYCLIC				
Total	27,802	21,949	25,808	1.18
Accelerators, activators, and vulcanizing agents, total	8,763	...	...	...
Dithiocarbamic acid derivatives, total[3]	5,590	...	...	...
Dibutyldithiocarbamic acid, nickel salt	...	506	1,788	3.53
All other accelerators, activators, and agents[7]	3,173	...	...	...
All other acyclic rubber-processing chemicals[8]	19,039	21,443	24,020	1.12

[1] Calculated from unrounded figures.

[2] Includes aldehyde-amine reaction products, guanidines, dithiocarbamates, and other accelerators, activators, and vulcanizing agents.

[3] Data on dithiocarbamates included in this table are for materials used chiefly in the processing of natural and synthetic rubber. Data on dithiocarbamates, which are used chiefly as fungicides, are included in the section on "Pesticides and Related Products."

[4] Includes aldehyde- and acetone-amine reactions products.

[5] Also includes other antioxidants, antiozonants, and stabilizers.

[6] Includes blowing agents, peptizers, and other cyclic rubber-processing chemicals.

[7] Includes thiurams, xanthates, sulfides, and other accelerators, activators, and vulcanizing agents.

[8] Includes blowing agents, polymerization regulators, shortstops, and other acyclic rubber processing chemical.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
ALDEHYDE-AMINE REACTION PRODUCTS:	
Heptaldehyde-aniline condensate	USR.
Tetrahydro-3,5-dimethyl-4H-1,3,5-oxadiazine-4-thione	RBC.
Triethyltrimethylenetriamine	USR.
Aldehyde-amine reaction products, cyclic, other	DUP.
DITHIOCARBAMIC ACID DERIVATIVES:	
Dibenzyldithiocarbamic acid, sodium salt	USR.
Dibenzyldithiocarbamic acid, zinc salt	USR.
2,4-Dinitrophenyl dimethyldithiocarbamate	USR.
GUANIDINES:	
Dicatechol borate, di-o-tolylguanidine salt	DUP.
*THIAZOLE DERIVATIVES:	
1,3-Bis(2-benzothiazolylmercaptomethyl) urea	RBC.
N-tert-Butyl-2-benzothiazolesulfenamide	BFG, MON, USR.
N-Cyclohexyl-2-benzothiazolesulfenamide	MON, USR.
2,5-Dimercapto-1,3,4-thiadiazole	VNC.
*2,2'-Dithiobisbenzothiazole	BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole	GYR, MON, USR.
2-Mercaptobenzothiazole, copper salt	ACY.
2-Mercaptobenzothiazole derivative	VNC.
2-Mercaptobenzothiazole, zinc salt	GYR, USR, VNC.
N-Morpholinyl-2-benzothiazolyl disulfide	GYR.
N-Oxydiethylene-2-benzothiazolesulfenamide	BFG, USR.
N-Oxydiethylenethiocarbamyl-N'-oxydiethylenesulfenamide	BFG.
Thiazole derivatives, cyclic, other	X.
*ALL OTHER CYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
Bis(morpholinothiocarbamoyl) disulfide	ACY.
Dibenzylamine	USR.
1,3-Dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione	VNC.
Dimethylammonium hydrogen isophthalate	VNC.
Di-N,N'-pentamethylenethiuram tetrasulfide	DUP, VNC.
4,4'-Dithiodimorpholine	MON, USR.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS--CONTINUED	
*ALL OTHER CYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS--CONTINUED	
2-Mercaptotololuimidazole, zinc salt	VNC.
m-Phenylenebismaleimide	DUP.
Tetramethylthiuram tetrasulfide	GYR.
p-Toluenesulfinic acid, zinc salt	USR.
Accelerators, activators, and vulcanizing agents, cyclic, other	DUP.
*ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS:	
*AMINO ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS:	
ALDEHYDE- AND ACETONE-AMINE REACTION PRODUCTS:	
Butyraldehyde-aniline condensate	DUP.
Diphenylamine-acetone aldehyde	USR.
Diphenylamine-acetone condensate	BFG, USR.
*SUBSTITUTED P-PHENYLENEDIAMINES:	
Alkylaryl-p-phenylenediamines	MON.
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine	MON, UPM.
N,N'-Bis(1-ethyl-3-methylpentyl)-p-phenylenediamine	UPM.
N,N'-Bis(1-methylheptyl)-p-phenylenediamine	UPM.
Diarylenediamines, mixed	GYR.
N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine	GYR, UPM.
N,N'-Di-2-naphthyl-p-phenylenediamine	BFG.
N,N'-Diphenyl-p-phenylenediamine	BFG.
N-Isopropyl-N'-phenyl-p-phenylenediamine	USR.
N-(1-Methylheptyl)-N'-phenyl-p-phenylenediamine	UMP.
N-(1-Methylpentyl)-N'-phenyl-p-phenylenediamine	USR.
p-Phenylenediamines, substituted, other	KPI.
*OTHER AMINES:	
p-Anilinophenol	BFG.
1,2-Dihydro-6-ethoxy-2,2,4-Trimethylquinoline (Ethoxyquin)	MON.
1,2-Dihydro-2,2,4-trimethylquinoline	BFG, MON, USR.
Diphenylamine-styrenated	GYR.
Nonyldiphenylamine mixture (Mono-, di-, and tri)	USR.
Octyldiphenylamine	BFG, USR.
Octyldiphenylamine, alkylated	BFG.
p-(p-Toluenesulfonamido)diphenylamine	USR.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS--CONTINUED	
*PHENOLIC AND PHOSPHITE ANTIOXIDANTS AND STABILIZERS:	
PHOSPHITES:	
Alkylaryl phosphites mixed	FER, MCB.
Nonylphenyl phosphites, mixed	FER, MCB, OMC, USR.
Polymeric phosphites	MCB, OMC.
Polyphenolic phosphites, polyalkylated	BFG, MCB.
Triaryl phosphites	MCB.
*POLYPHENOLICS (INCLUDING BISPHENOLS):	
Bisphenol, hindered	DUP, GYR, USR.
4,4'-Butylidenebis(6-tert-butyl-m-cresol)	MON.
2,5-Di-sec-butyldecylhydroquinone	USR.
2,5-Di-(1,1-dimethylpropyl)hydroquinone	MON.
2,2'-Methylenebis(6-tert-butyl-p-cresol)	ACY, FER.
2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)	ACY.
1,1,3-Tri(2-methyl-4-hydroxy-5-tert-butylphenyl) butane	ICI.
ALL OTHER PHENOLIC ANTIOXIDANTS AND STABILIZERS:	
Phenol, alkylated	ACY, BFG, GYR, NEV, RCI.
Phenol, hindered	OMC, USR.
Phenol, styrenated, mixtures	GYR, NEV, USR.
N-Stearoyl-p-aminophenol	HXL.
BLOWING AGENTS:	
Dinitrosopentamethylenetetramine	OMC.
p,p'-Oxybis(benzenesulfonhydrazide)	OMC, USR.
5-Phenyltetrazole	OMC.
p-Toluenesulfonylhydrazide	USR.
p-Toluenesulfonylsemicarbazide	USR.
PEPTIZERS:	
2',2'''-Dithiobis(benzanilide)	ACY.
ALL OTHER CYCLIC RUBBER-PROCESSING CHEMICALS:	
p-tert-Amylphenol sulfide (Tackifier)	PAS.
4-Chloro-2,6-bis(2,4-dihydroxybenzyl)phenol	ICI.
N-(Cyclohexylthio)phthalimide	MON.
Diphenyl-4,4'-diphenylmethylenedicarbamate	USR.
Rubber-processing chemicals, cyclic, all other	ACY, FER.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
*DITHIOCARBAMIC ACID DERIVATIVES:	
Dialkyldithiocarbamic acid derivative	VNC.
*Dibutyldithiocarbamic acid, nickel salt	DUP, USR, VNC.
Dibutyldithiocarbamic acid, sodium salt	DUP, USR, VNC.
Dibutyldithiocarbamic acid, zinc salt	RBC, VNC.
Diethyldithiocarbamic acid, cadmium salt and bis(diethylthiocarbamoyl)disulfide, mixture	VNC.
Diethyldithiocarbamic acid, selenium salt	VNC.
Diethyldithiocarbamic acid, sodium salt	VNC.
Diethyldithiocarbamic acid, tellurium salt	VNC.
Diethyldithiocarbamic acid, zinc salt	GYR, VNC.
Dimethyldithiocarbamic acid, bismuth salt	VNC.
Dimethyldithiocarbamic acid, copper salt	VNC.
Dimethyldithiocarbamic acid, lead salt	VNC.
Dimethyldithiocarbamic acid, selenium salt	VNC.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide	BFG.
Dimethyldithiocarbamic acid, zinc salt	GYR, USR, VNC.
Dithiocarbamic acid derivatives, acyclic, other	DUP, X.
THIURAMS:	
Bis(dibutylthiocarbamoyl) disulfide	VNC.
Bis(diethylthiocarbamoyl) disulfide	GYR.
Bis(dimethylthiocarbamoyl) disulfide	GYR.
Bis(dimethylthiocarbamoyl) sulfide	GYR.
N,N'-Dioctadecyl-N,N'-diisopropyl thiuram disulfide	USR.
XANTHATES AND SULFIDES:	
Di-n-butylxantho disulfide	USR.
Diisopropylxantho disulfide	BFG.
Zinc isopropyl xanthate	VNC.
*ALL OTHER ACYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
p-Aminocyclohexylmethane carbonate	DUP.
n-Butyraldehyde-butylamine condensate	DUP.
BLOWING AGENTS:	
1,2-Hydrazinedicarboxylic acid, bis(1-methylethyl) ester	USR.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
POLYMERIZATION REGULATORS:	
Alkyl mercaptans, mixed	PLC.
n-Decyl mercaptan	PLC.
n-Dodecyl mercaptans	PAS, PLC.
tert-Hexadecyl mercaptan	PLC.
tert-Nonyl mercaptan	PAS, PLC.
n-Octyl mercaptan	PLC.
Tetradecyl mercaptan	PLC.
SHORTSTOPS:	
Dimethyldithiocarbamic acid, potassium salt	USR.
Dimethyldithiocarbamic acid, sodium salt	ALC, USR.
*ALL OTHER ACYCLIC RUBBER-PROCESSING CHEMICALS:	
Waxes and paraffinic products	DUP, RCI.
Zinc laurate (Activator, physical property improver, and processing auxiliary)	USR.
Rubber-processing chemicals, acyclic, all other	OMC, VNC, WVA.

TABLE 3.--RUBBER-PROCESSING CHEMICALS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of rubber-processing chemicals to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ACY	American Cyanamid Co.
ALC	Alco Chemical Corp.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group
DUP	E. I. duPont de Nemours & Co., Inc.
FER	Ferro Corp., Ferro Chemical Div.
GYR	Goodyear Tire & Rubber Co.
HXL	Hexcel Corp., Hexcel Chemical Products
ICI	ICI Americas, Inc., Chemicals Div.
KPI	Kenrich Petrochemicals, Inc.
HCB	Borg-Warner Corp., Borg-Warner Chemicals
MON	Monsanto Co.
NEV	Neville Chemical Co.
OMC	Olin Corp.
PAS	Pennwalt Corp.
PLC	Phillips Petroleum Co.
RBC	Fike Chemicals, Inc.
RCI	Reichhold Chemicals, Inc.
UPM	UOP, Inc., UOP Process Div.
USR	Uniroyal, Inc., Chemical Group
VNC	Vanderbilt Chemical Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SECTION X -- ELASTOMERS

STATISTICAL HIGHLIGHTS

Edward J. Taylor
202-523-3709

Elastomers (synthetic rubber) are high polymeric materials with properties similar to those of natural rubber. The term "elastomers" as used in this report means a substance, whether in bale, crumb, powder, latex, or other crude
form, which can be vulcanized or similarly processed into a material that can
e stretched to at least twice its original length; and, after having been so
retched and the stress removed, will return with force to approximately
ir original length. U.S. production and sales of elastomers in 1984 are
wn in table 1.[1]

Total U.S. production[2] of synthetic rubber in 1984 amounted to 4,609
on pounds, an increase of 14.9 percent from that produced in 1983. Total
of elastomers in 1984 amounted 2,686 million pounds, a decrease of 0.10
t from that sold in 1983.

rene-butadiene rubber (SBR, or S-type rubber) in 1984 continued to be
tomer produced in the greatest quantity as it has been for more than a
f a century. U.S. production of S-type rubber, including 22 million
its vinylpyridine sub-type, amounted to 2,000 million pounds in
ution polymerized butadiene rubber, a stereo type elastomer, was
mestically in 1984 in the next largest amount--675 million pounds.
ipal types of synthetic elastomers for which U.S. production data
separately are ethylene-propylene rubber, production of which was
pounds in 1984; and butadiene-acrylonitrile (NBR-type) rubber,
which was 146 million pounds.

S-type rubber by U.S. producers in 1984 amounted to 970 million
of solution polymerized butadiene rubber amounted to 291
and those of ethylene-propylene rubber to 349 million pounds.
e rubber in 1984 amounted to 104 million pounds.

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[1] See also table 2 which lists these products and indicates the manufacturers of each by code. The codes are identified by company name in table 3.

[2] Urethane type elastomers are now included in the section "Plastics and Resin Materials."

STATISTICAL HIGHLIGHTS

Edward J. Taylor
202-523-3709

Elastomers (synthetic rubber) are high polymeric materials with properties similar to those of natural rubber. The term "elastomers" as used in this report means a substance, whether in bale, crumb, powder, latex, or other crude form, which can be vulcanized or similarly processed into a material that can be stretched to at least twice its original length; and, after having been so stretched and the stress removed, will return with force to approximately their original length. U.S. production and sales of elastomers in 1984 are shown in table 1.[1]

Total U.S. production[2] of synthetic rubber in 1984 amounted to 4,609 million pounds, an increase of 14.9 percent from that produced in 1983. Total sales of elastomers in 1984 amounted 2,686 million pounds, a decrease of 0.10 percent from that sold in 1983.

Styrene-butadiene rubber (SBR, or S-type rubber) in 1984 continued to be the elastomer produced in the greatest quantity as it has been for more than a quarter of a century. U.S. production of S-type rubber, including 22 million pounds of its vinylpyridine sub-type, amounted to 2,000 million pounds in 1984. Solution polymerized butadiene rubber, a stereo type elastomer, was produced domestically in 1984 in the next largest amount--675 million pounds. Other principal types of synthetic elastomers for which U.S. production data are reported separately are ethylene-propylene rubber, production of which was 435 million pounds in 1984; and butadiene-acrylonitrile (NBR-type) rubber, production of which was 146 million pounds.

Sales of S-type rubber by U.S. producers in 1984 amounted to 970 million pounds. Sales of solution polymerized butadiene rubber amounted to 291 million pounds, and those of ethylene-propylene rubber to 349 million pounds. Sales of NBR-type rubber in 1984 amounted to 104 million pounds.

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[1] See also table 2 which lists these products and indicates the manufacturers of each by code. The codes are identified by company name in table 3.

[2] Urethane type elastomers are now included in the section "Plastics and Resin Materials."

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TABLE 1.--ELASTOMERS (SYNTHETIC RUBBER): U.S. PRODUCTION AND SALES, 1984

[Listed below are elastomers (synthetic rubber) for which reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all elastomers for which data on production and/or sales were reported and identifies the manufacturers of each]

ELASTOMERS	PRODUCTION[2]	SALES		
		QUANTITY[2]	VALUE	UNIT VALUE[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	4,609,305	2,685,808	2,266,325	$0.84
Butadiene-acrylonitrile type (NBR-type)	145,859	104,342	106,127	1.02
Ethylene-propylene type (EP-type)	435,048	348,898	274,844	.79
Polyacrylate ester type	6,249	4,675	10,124	2.17
Polybutadiene (solution polymerized) type (BR-type)	675,412	291,239	160,164	.55
Styrene-butadiene type (SBR-type)	1,977,321	970,139	442,840	.46
Styrene-butadiene-vinylpyridine type	22,420	...	...	...
All other elastomers[4]	1,346,996	966,515	1,272,226	1.32

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[1] The term "elastomers" is defined as substance in bale, crumb, powder, latex, and other crude forms which can be vulcanized or similarly processed into materials that can be stretched at 68° F. to at least twice their original length and, after having been stretched and the stress removed, will return with force to approximately their original length.

[2] Includes oil content of oil-extended elastomers.

[3] Calculated from unrounded figures.

[4] Includes acrylic ester, butyl, chlorinated natural rubber, chloroprene, epichlorohydrin, fluorinated elastomers, polybutadiene type (emulsion), polyisoprenes, polysulfide, silicone type, styrene-butadiene-vinylpyridine type (sales only), and miscellaneous elastomers.

TABLE 2.--ELASTOMERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3]

ELASTOMERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC ELASTOMERS	
STYRENE-BUTADIENE TYPE:	
*Styrene-butadiene (SBR-Type)	ASY, BFG, CPY, FRS, GNT, GRD, GYR, MMM, PLC, PLR, USR.
*Styrene-butadiene-vinylpyridine	BFG, FRS, GNT, GYR.
Polyisoprene, cyclized	WAY.
ALL OTHER CYCLIC ELASTOMERS:	
Elastomers, cyclic, all other	HPC, SHC.
ACYCLIC ELASTOMERS	
*POLYACRYLATE ESTER TYPE:	
Polyacrylate ester, type elastomers	ACY, BFG.
Polyalkalene oxide	PRC.
POLYALKALENE SULFIDE TYPE:	
Butadiene-acrylic acid-acrylonitrile	ASY.
Polyalkalene sulfide, type elastomers	MRT.
*BUTADIENE-ACRYLONITRILE TYPE (NBR-TYPE):	
*Butadiene-acrylonitrile type (NBR-Type)	BFG, CPY, GYR, MMM, USR.
POLYBUTADIENE TYPE (BR-Type):	
*Polybutadiene type (Solution polymerized)	GYR, LC, MRT.
POLYCHLOROPRENE TYPE (NEOPRENE):	
Polychloroprene type (Neoprene)	DKA, DUP.
Epichlorohydrin rubbers	DUP, HPC.
Fluoroelastomers	DUP, MMM.
POLYISOBUTYLENE TYPE:	
Polisobutylene, type elastomers	ENJ.
ISOBUTYLENE-ISOPRENE TYPE (BUTYL):	
Isobutylene-isoprene type (Butyl)	ENJ.
PRODUCTS OF NATURAL RUBBER::	
Polymerized chlorinated natural rubbers	HPC.
SILICONE TYPE:	
Silicone type elastomers	DCC, PTS, SPD, SWS.
STEREOISOMER TYPE:	
*Ethylene-propylene rubber (EP-type)	CPY, DUP, ENJ, USR.
*Polybutadiene (Solution polymerized)	ASY, FRS, GNT, GYR, PLC.
Polyisoprene (Solution polymerized)	GYR.
Stereoisomer type, all other	ADC, FRS.
ALL OTHER ACYCLIC ELASTOMERS:	
Elastomers, acyclic, all other	BFG, DUP.

TABLE 3.--ELASTOMERS (SYNTHETIC RUBBER): DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of elastomers to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ACY	American Cyanamid Co.	HPC	Hercules, Inc.
ADC	Anderson Development Co.	LC	Lord Corp., Chemical Products Group
ASY	American Synthetic Rubber Corp.	MMM	Minnesota Mining and Manufacturing Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
CPY	Copolymer Rubber & Chemical Corp.	PLC	Phillips Petroleum Co.
DCC	Dow Corning Corp.	PLR	Polysar, Inc., Latex Div.
DKA	Denka Chemical Corp.	PRC	Products Research & Chemical Corp.
DUP	E. I. duPont de Nemours & Co., Inc.	PTS	Petrarch Systems, Inc.
ENJ	Exxon Chemical Americas	SHC	Shell Oil Co., Shell Chemical Co. Div.
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.	SPD	General Electric Co., Silicone Products Dept.
GNT	Gencorp, Polymers Div.	SWS	Stauffer Chemical Co., SWS Silicones Div.
GRD	W. R. Grace & Co., Polymers & Chemical Div.	USR	Uniroyal, Inc., Chemical Group
GYR	Goodyear Tire & Rubber Co.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

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STATISTICAL HIGHLIGHTS

Jesse Lawrence Johnson
202-523-0127

Plasticizers are organic chemicals that are added to synthetic plastics and resin materials to (1) improve workability during fabrication, (2) extend or modify the natural properties of these materials, or (3) develop new improved properties not present in the original material. Table 1 presents statistics on U.S. production and sales of plasticizers in as great a detail as is possible without revealing the operations of individual producers.

U.S. production of plasticizers totaled 1,788 million pounds in 1984, an increase of 4.5 percent from the 1,710 million pounds reported for 1983. Sales of plasticizers totaled 1,685 million pounds, valued at $849 million, in 1984, compared with 1,597 million pounds, valued at $775 million, in 1983.

Production of cyclic plasticizers in 1984, which consisted chiefly of the esters of phthalic anhydride, phosphoric acid, and trimellitic acid, amounted to 1,338 million pounds, an increase of 4.5 percent from the 1,280 million pounds reported for 1983. Sales of cyclic plasticizers in 1984 totaled 1.307 million pounds, valued at $578 million, compared with 1,232 million pounds, valued at $518 million, in 1983. The most important cyclic plasticizers were the dioctyl phthalates, with production of 301 million pounds, in 1984.

Production of acyclic plasticizers in 1984 totaled 449 million pounds, an increase of 4.5 percent from the 430 million pounds reported for 1983. Sales of acyclic plasticizers totaled 378 million pounds, valued at $271 million, in 1984, compared with 365 million pounds, valued at $257 million, in 1983. Epoxidized soya oils were the most important acyclic plasticizers in 1984 with production of 104 million pounds.

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TABLE 1.--PLASTICIZERS:[1] U.S. PRODUCTION AND SALES, 1984

[Listed below are plasticizers for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all plasticizer chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

PLASTICIZERS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	1,787,528	1,685,207	848,777	$0.50
Benzenoid[3]	1,496,939	1,425,899	666,926	.47
Nonbenzenoid	290,589	259,308	181,851	.70
CYCLIC				
Total	1,338,362	1,307,210	577,694	.44
Phosphoric acid esters[4]	58,242	55,604	56,301	1.01
Phthalic anhydride esters, total	1,179,054	1,151,267	451,773	.39
Dibutyl phthalates (including diisobutyl phthalates)	22,212	18,901	8,384	.44
Diethyl phthalate	17,745	15,104	22,284	1.48
Diisodecyl phthalate	145,815	140,802	52,771	.37
Dimethyl phthalate	8,637	8,721	5,686	.65
Dioctyl phthalates, total[5]	301,124	322,078	110,495	.34
Di-tridecyl phthalate	21,787	19,468	11,388	.58
All other phthalic anhydride esters	661,734	626,193	240,765	.38
Trimellitic acid esters, total	53,793	55,928	39,125	.70
Trioctyl trimellitates	12,762	12,201	7,698	.63
All other trimellitic acid esters	41,031	43,727	31,427	.73
All other cyclic plasticizers[6]	47,273	44,411	30,495	.67
ACYCLIC				
Total	449,166	377,997	271,083	.72
Adipic acid esters, total	124,854	87,904	60,163	.68
Di(2-ethylhexyl) adipate	27,579	28,530	16,035	.56
Diisooctyl adipate	1,490	2,043	1,272	.62
Diisopropyl adipate	246	354	323	.91
Ditridecyl adipate	7,726	7,464	6,360	.85
All other adipic acid esters	87,813	49,513	36,173	.73
Complex linear polyesters and polymeric plasticizers, total	45,270	32,794	30,671	.94
Adipic acid type	12,737	10,998	10,694	.97
All other	32,533	21,796	19,977	.92
Epoxidized esters, total	122,430	116,899	69,519	.59
Epoxidized linseed oils	4,764	4,663	3,649	.78
Epoxidized soya oils	104,196	100,167	57,283	.57
All other epoxidized esters	13,470	12,069	8,587	.71
Oleic acid esters, total	12,850	11,830	7,567	.64
Butyl oleate	1,715	1,831	1,158	.63
Decyl oleate	282	278	404	1.45
All other oleic acid esters	10,853	9,721	6,005	.62

See footnotes at end of table.

AVAILABLE

TABLE 1.--PLASTICIZERS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

PLASTICIZERS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
ACYCLIC--Continued				
Palmitic acid esters	5,436	...	...	...
Phosphoric acid esters	31,098	24,325	26,909	1.11
Di(2-ethylhexyl) sebacate	3,459	4,241	6,397	1.51
Stearic acid esters, total	10,790	11,116	8,579	.77
n-Butyl stearate	7,054	7,087	4,091	.58
all other stearic acid esters	3,736	4,029	4,488	1.11
All other acyclic plasticizers	92,979	88,888	61,278	.69

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[1] Includes data for compounds used principally (but not exclusively) as primary plasticizers. Does not include clearly defined extenders or secondary plasticizers.

[2] Calculated from unrounded figures.

[3] Includes benzenoid products as defined in part 1, schedule 4, of the Tariff Schedules of the United States Annotated.

[4] Includes data for cresyl diphenyl phosphate, dibutyl phenyl phosphate, diphenyl octyl phosphate, tricresyl phosphate, triphenyl phosphate, and other cyclic phosphoric acid esters.

[5] The difference between the production reported here and that shown on the Priliminary Report on U.S. Production of Selected Organic Chemicals (including Synthetic Plastics and Resins Materials, 1983, results from a combination of incorrect reporting by some companies, end-of-year inventory adjustments, and rounding.

[6] Includes data for glycol dibenzoates, toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

[7] Includes data for azelaic acid esters, citric and acetylcitric acid esters, myristic acid esters, pelargonic acid esters, ricinoleic and acetylricinoleic acid esters, glyceryl and glycol esters, and other acyclic plasticizers

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
N-n-Butyl benzenesulfonamide	TNA.
Coumarone-indene plasticizers	NEV.
Dibenzyl azelate	HAL.
Diethylene glycol dibenzoate	KLM, VEL.
Dipropanediol dibenzoate (Dipropylene glycol dibenzoate)	KLM, VEL.
N-Ethyl-p-toluenesulfonamide	MON, NES.
*PHOSPHORIC ACID ESTERS:	
Diphenyl octyl phosphate	MON.
Isodecyl diphenyl phosphate	SFS.
Tricresyl phosphate	FMC, SFS.
Triphenyl phosphate	EK, MON, SFS.
Phosphoric acid esters, all other	FMC, MON, SFS.
*PHTHALIC ANHYDRIDE ESTERS:	
Alkyl benzyl phthalates	MON.
Bis(2-ethylhexyl)terephthlate	EKT.
Butyl benzyl phthalate	MON.
Butyl 2-ethylhexyl phthalate	DBC.
Butyl octyl phthalates	RCI, USS.
Di(2-butoxyethyl) phthalate	HAL.
*Dibutyl phthalate (Including diisobutyl phthalate)	DBC, EKT, HCC, NOD, RCI, USS, WTH.
Dicyclohexyl phthalate	MRF.
Diethylene glycol phthalate	CMB.
Diethyl isophthalate	X.
*Diethyl phthalate	DBC, EKT, KF, MON, MRF.
*Diisodecyl phthalate	DBC, ENJ, NOD, PCI, TEK, USS.
Diisohexyl phthalate	ENJ.
Diisononyl phthalate	DBC, ENJ, TEK, USS.
Di(2-methoxyethyl) phthalate	EKT.
Dimethyl isophthalate	X.
*Dimethyl phthalate	EKT, KF, MRF, WTC.
Dinonyl phthalate	ENJ.
*Di-tridecyl phthalate	ENJ, HCC, NOD, PCI, SN, TEK, USS.
Diundecyl phthalate	MON.
Di-(n-heptyl-n-nonyl) undecyl phthalate	ENJ.
Hexyl n-decyl phthalate	VST.

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TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*PHTHALIC ANHYDRIDE ESTERS--CONTINUED:	
n-Octyl n-decyl phthalate	RCI, USS.
Phthalic acid, diallyl ester	TMA.
*DIOCTYL PHTHALATES:	
Dicapryl phthalate	WTH.
Di(2-ethylhexyl) phthalate	DBC, EKT, ENJ, HCC, MRF, NOD, RCI, TEK, USS, VST.
Diisooctyl phthalate	ENJ, RCI, TEK.
Di-n-octyl phthalate	EK.
Dioctyl phthalates, all other	DBC.
GLYCOL PHTHALATE ESTERS:	
Butyl phthalyl butyl glycolate	MRF.
Phthalic anhydride esters, all other	DBC, HCC, MON, NOD, TEK.
Polyethylene glycol dibenzoate	VEL.
Tetrahydrofurfuryl oleate	EMR.
Toluenesulfonamide o-, p-mixtures	MON.
*TRIMELLITIC ACID ESTERS:	
Tri(2-ethylhexyl) trimellitate	DBC, HCC.
Triisodecyl trimellitate	ENJ, HCC, NOD.
Triisononyl trimellitate	TEK.
Triisooctyl trimellitate	ENJ, RCI, TEK.
Trimethyl trimellitate	FER.
Tri-n-octyl n-decyl trimellitate	RCI, TEK.
*Trioctyl trimellitate	EKT, RCI, TEK, USS, WTH.
Trimellitic acid esters, all other	HCC, TEK, USS, X.
Cyclic plasticizers, all other	DBC, NEV, NOD, SBC.
ACYCLIC	
*ADIPIC ACID ESTERS:	
Butylene glycol adipate	HAL.
Di(2-(2-butoxyethoxy)ethyl) adipate	EKT, HAL, MON, MRT, RCI.
Dibutoxyethyl adipate	HAL.
Di(2-ethylhexyl) adipate	DBC, EKT, ENJ, HCC, NOD, RCI, TEK, USS, WTH.
Di-n-hexyl adipate	MON.
Diisobutyl adipate	HAL, HCC.
Diisodecyl adipate	EMR, HCC, MRF, NOD, RCI, SM.
Diisononyl adipate	ENJ, TEK, USS.
*Diisooctyl adipate	ENJ, HAL, HCC, RCI.
*Diisopropyl adipate	HAL, VND, WM, WTH.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ADIPIC ACID ESTERS--CONTINUED:	
Dimethyl adipate	PFZ, X.
Di-n-octyl adipate	WM, WTH.
Di-n-propyl adipate	HCC.
*Di-tridecyl adipate	EMR, HCC, NOD, SM, WM.
Ethylene glycol adipate	HAL.
Neopentyl glycol adipate	HAL.
n-Octyl n-decyl adipate	HAL, HCC, MON, RCI, TEK, USS.
Propylene glycol adipate	HAL.
*Adipic acid esters, all others	DBC, HAL, HCC, WTC.
AZELAIC ACID ESTERS:	
Bis(hydroxypropyl) azelate	EMR.
Dibutyl azylate	EKT.
Di(2-ethylhexyl) azelate	EKT, EMR, RCI.
Diiso-octyl azelate	EMR.
CITRIC AND ACETYLCITRIC ACID ESTERS:	
Tributyl acetylcitrate	X.
Tributyl citrate	X.
Triethyl acetylcitrate	MRF, PFZ.
Triethyl citrate	MRF.
Citric and acetylcitric acid esters, all other	X.
*COMPLEX LINEAR POLYESTERS AND POLYMERIC PLASTICIZERS:	
*Adipic acid type complex linear polyesters and polymeric plasticizers	HAL, MRF, SHX, TEK, WTC, WTH.
*Complex linear polyesters and polymeric plasticizers, all other	EKX, EMR, HPC, MON, RCI, SFS, SM, VND, WM, WTC.
Poly(2,2,4-trimethyl-1,3-pentanediol) maleate	EKT.
Di(2-(2-butoxyethoxy)ethyl) methane	MRT.
*EPOXIDIZED ESTERS:	
*Epoxidized linseed oils	FER, UCC, VIK, WTC.
Epoxidized pentaerythritol tetraphthalate	UCC.
*Epoxidized soya oils	FER, FMC, TEK, UCC, VIK, WTC.
2-Ethylhexyl epoxytallates	UCC.
Octyl epoxytallates	WTC.
*Epoxidized esters, all other	VIK.
Glyceryl tripropionate	EKT.
GLUTARIC ACID ESTERS:	
Butylene glycol glutarate	HAL.
Neopentyl glycol glutarate	HAL.
Propylene glycol glutarate	HAL.
Glutaric acid esters, all other	HAL.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
MYRISTIC ACID ESTERS:	
Isopropyl myristate	WM, WTH.
Myristyl ethoxy myristate	SCP.
OCTANOIC ACID ESTERS:	
Palmityl octanoate	SBC.
Octanoic acid esters, all other	HAL.
*OLEIC ACID ESTERS:	
*Butyl oleate	CHL, EMR, HAL, TCH, WTC, WTH.
*Decyl oleate	SBC, SCP, VND.
2-Ethylhexyl oleate	HAL.
Glyceryl trioleate (Triolein)	EMR, WTC.
Isobutyl oleate	DA.
Isooctyl oleate	HAL.
Methyl oleate	DA, EMR, TCH, WTC.
Neopentyl glycol dioleate	HCC.
Oleyl oleate	SBC.
Oleic acid esters, all other	EMR, HAL.
Trimethylolpropane trioleate	HCC.
PROPYL OLEATES:	
n-Propyl oleate	CHL, EMR, TCH.
*PALMITIC ACID ESTERS:	
n-Butyl palmitate	EKT.
2-Ethylhexyl palmitate	VND, WTH.
Isopropyl palmitate	TCH, WM, WTH.
2-Methoxyethyl palmitate	EKT.
PELARGONIC ACID ESTERS:	
2-Ethylhexyl pelargonate	SBC.
Glycol pelargonate	EMR, TCH.
Isodecyl pelargonate	EMR.
*PHOSPHORIC ACID ESTERS:	
Tri(2-butoxyethyl) phosphate	FMC, MON.
Tri(2-chloroethyl) phosphate	SFS.
Tri(2-chloropropyl) phosphate	FER, SCS.
Triethyl phosphate	EKT.
Trioctyl phosphate	SFS.
Phosphoric acid esters, all other	SFS.
RICINOLEIC AND ACETYLRICINOLEIC ACID ESTERS:	
n-Butyl acetylricinoleate	CAS.
Butyl ricinoleate	CAS.
Ethyl glycol monoricinoleate	CAS.

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TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
RICINOLEIC AND ACETYLRICINOLEIC ACID ESTERS--CONTINUED	
Glyceryl monoricinoleate	CAS.
Glyceryl tri(acetylricinoleate)	CAS.
Methyl acetylricinoleate	CAS.
Methyl ricinoleate	CAS, DA.
Propylene glycol monoricinoleate	CAS.
SEBACIC ACID ESTERS:	
Dibutoxyethyl sebacate	HAL.
Dibutyl sebacate	X.
*Di(2-ethylhexyl) sebacate	HAL, HCC, X.
Diisopropyl sebacate	SBC, X.
Dimethyl sebacate	X.
Propylene glycol sebacate	HAL.
*STEARIC ACID ESTERS:	
*n-Butyl stearate	CHL, EMR, SCP, TCH, WM, WTC, WTH.
Diethylene glycol succinate	CMB.
2-Ethylhexyl stearate	STC, TCH.
Glyceryl triacetyl stearate	CAS.
Hexadecyl stearate	HCC, STC.
Isobutyl stearate	DA, TCH, WTH.
Isodecyl stearate	WM.
Methyl hydroxy stearate	CAS.
Methyl pentachlorostearate	VDM.
Myristyl stearate	VND.
2-Octyldecyl-12-stearoyl stearate	VND.
Propylene glycol monohydroxystearate	CAS.
Tridecyl stearate	HCC.
*Stearic acid esters, all other	HPC, SBC, SCP, WTC.
Sucrose acetate isobutyrate	EKT.
Tetraethylene glycol di(2-ethylhexanoate)	HAL, UCC, WM.
Triethylene glycol di(caprylate-caprate)	HAL.
Triethylene glycol di(2-ethylbutyrate)	UCC.
Triethylene glycol di(2-ethylhexanoate)	EKT, HAL.
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	EKX.
*Acyclic plasticizers, all other	ARZ, EMR, HCC, HPC, TCH.

TABLE 3.--PLASTICIZERS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of plasticizers to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ARZ	Arizona Chemical Co.
CAS	Caschem, Inc.
CHL	Chemol, Inc.
CMB	Cambridge Industries Co.
DA	Diamond Shamrock Corp., Chemicals Co.
DBC	Badische Corp.
DOW	Dow Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.
EK	Eastman Kodak Co.:
EKT	Tennessee Eastman Co. Div.
EKX	Texas Eastman Co. Div.
EMR	Emery Chemicals Div. of National Distillers & Chemical Corp.
ENJ	Exxon Chemical Americas
FER	Ferro Corp.:
	Ferro Chemical Div.
	Grant Chemical Div.
FMC	FMC Corp.
HAL	C. P. Hall Co.
HCC	Hatco Chemical Corp.
HOD	Hodag Chemical Corp.
HPC	Hercules, Inc.
KF	Kay-Fries, Inc., Chemical Div., Dynamit Nobel of America, Inc.
KLM	Kalama Chemical, Inc.
MON	Monsanto Co.
MRF	Morflex Chemical Co., Inc.

CODE	NAME OF COMPANY
MRT	Morton-Thiokol, Inc., Morton Chemical Div.
NES	Ruetgers-Nease Chemical Co.
NEV	Neville Chemical Co.
NOD	Nuodex, Inc.
PFZ	Pfizer, Inc.
RCI	Reichhold Chemicals, Inc.
SBC	Scher Chemicals, Inc.
SCP	Henkel, Inc.
SFS	Stauffer Chemical Co., Specialty and Intermediates Div.
SHX	Sherex Chemical Co., Inc.
SM	Mobil Oil Corp., Mobil Chemical Co., Chemical Coatings Div.
STC	American Hoechst Corp., Sou-Tex Works
TCH	Emery Industries, Inc., Trylon Div.
TEK	Teknor Apex Co.
TNA	Ethyl Corp.
UCC	Union Carbide Corp.
USS	U.S. Steel Corp., USS Chemicals Div.
VDM	Van De Mark Chemical Co., Inc.
VEL	Vesicol Chemical Corp.
VIK	Viking Chemical Co.
VND	Van Dyk Div. of Mallinckrodt, Inc.
VST	Vista Polymers, Inc.
WM	Inolex Chemical Div.
WTC	Witco Chemical Corp.
WTH	Union Camp Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

STATISTICAL HIGHLIGHTS

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202-523-0491

The surface-active agents included in this report are organic chemicals that reduce the surface tension of water or other solvents and are used chiefly as detergents, dispersing agents, emulsifiers, foaming agents, or wetting agents in either aqueous or nonaqueous systems. Waxes and products used chiefly as plasticizers are excluded. Surface-active agents are produced from natural fats and oils, from silvichemicals such as lignin, rosin, and tall oil, and from chemical intermediates derived from coal tar and petroleum. A major part of the output of the bulk chemicals shown in this report is consumed in the form of packaged soaps and detergents for household and industrial use. The remainder is used in the processing of textiles and leather, in ore flotation and oil-drilling operations, and in the manufacture of agricultural sprays, cosmetics, elastomers, foods, lubricants, paint, pharmaceuticals, and many other products.

The statistics for production and sales of surface-active agents are grouped by ionic class and by chemical class and subclass. All quantities are reported in terms of 100-percent organic surface-active ingredients and thus exclude all inorganic salts, water, and other diluents. Sales statistics reflect sales of bulk surface-active agents only; sales of formulated products are excluded.

Total U.S. production of surface-active agents in 1984 amounted to 5,519 million pounds, or 8.9 percent more than the 5,068 million pounds reported for 1983. Sales of bulk surface-active agents in 1984 amounted to 3,443 million pounds, valued at $1,874 million, compared with sales in 1983 of 3,030 million pounds, valued at $1,464 million. In terms of quantity, sales in 1984 were 13.3 percent more than in 1983.

Production of anionic surface-active agents in 1984 amounted to 3,492 million pounds, or 63.3 percent of the total surfactant output reported for 1984. Sales of anionics in 1984 amounted to 1,750 million pounds, valued at $540 million.

Production of cationic surface-active agents in 1984 amounted to 456 million pounds, 20.9 percent more than the 377 million pounds reported in 1983. Production of nonionic surface-active agents amounted to 1,543 million pounds in 1984, 4.5 percent more than the 1,476 million pounds reported in 1983. Sales of cationic surface-active agents in 1984 increased by 11.1 percent in terms of quantity, and increased by 27.8 percent in terms of value when compared with sales as reported in 1983. Sales of nonionics in 1984 increased by 18.9 percent in terms of quantity, and increased by 50.0 percent in terms of value when compared with sales as reported in 1983.

The difference between production and sales reflects inventory changes and captive consumption of surface-active agents by synthetic rubber producers, and by manufacturers of cosmetics, packaged detergents, bar soaps, and other formulated consumer products. In some instances the difference may also reflect quantities of surface-active agents used as chemical intermediates, e.g., nonionic alcohol and alkylphenol ethoxylates which may be converted to anionic surface-active agents by phosphation or sulfation.

TABLE 1.--SUFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1984

[Listed below are the surface-active agents for which reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all surface-active agents for which data on production and/or sales were reported and identifies the manufacturers of each]

SURFACE-ACTIVE AGENTS	PRODUCTION[1]	SALES[2]		
		QUANTITY[1]	VALUE	UNIT VALUE[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	5,519,181	3,433,210	1,874,347	$0.55
AMPHOTERIC				
Total	27,881	24,706	27,722	1.12
ANIONIC				
Total	3,492,296	1,749,689	539,764	.31
Carboxylic acids (and salts thereof), total	823,609	137,791	72,942	.53
Amine salts of fatty, rosin, and tall oil acids	2,867	1,590	1,799	1.13
Carboxylic acids having amide, ester, or other linkages	2,707	2,035	2,969	1.46
Castor oil acids, potassium salt	38	37	22	.59
Coconut oil acids, potassium salt	...	746	391	.52
Coconut oil acids, sodium salt	103,110	...	...	...
Oleic acid, sodium salt	645	...	...	...
Palm oil acids, sodium salt	160	...	...	...
Stearic acid, potassium salt	521	388	213	.55
Tallow acids, sodium salt	341,811	...	...	...
All other carboxylic acids (and salts thereof)	371,750	132,995	67,548	.51
Phosphoric and polyphosphoric acid esters (and salts thereof), total	44,606	32,289	28,799	.89
Alcohols and phenols, alkoxylated and phosphated, total	31,492	27,257	21,435	.79
Decyl alcohol, ethoxylated and phosphated	1,060	1,223	831	.68
Mixed linear alcohols, ethoxylated and phosphated	4,933	4,294	4,002	.93
Nonylphenol, ethoxylated and phosphated	15,339	13,433	7,955	.61
Phenol alcohol, ethoxylated and phoshated	1,514	1,237	1,265	1.02
Tridecyl alcohol, ethoxylated and phosphated	760	...	...	...
All other	7,886	7,070	7,382	1.04
All other phosphoric and polyphosphoric acid esters (and salts thereof), total	13,114	5,032	7,364	1.46
2-Ethylhexyl phosphate, sodium salt	231	...	...	...
Mixed alkyl phosphate	3,316	1,445	2,175	1.51
All other	9,567	3,587	5,189	1.45
Sulfonic acids (and salts thereof), total	1,872,218	1,335,152	274,792	.21
Alkylbenzenesulfonates, total	582,416	172,247	86,784	.50
Dodecylbenzenesulfonic acid	209,278	98,432	45,724	.46
Dodecylbenzenesulfonic acid, ammonium salt	112	...	...	...
Dodecylbenzenesulfonic acid, calcium salt	8,136	5,127	5,006	.98
Dodecylbenzenesulfonic acid, isopropylamine salt	3,706	3,682	2,943	.80
Docecylbenzenesulfonic acid, sodium salt	205,289	54,665	27,282	.50
Dodecylbenzenesulfonic acid, triethanolamine salt	7,703	7,391	4,163	.56
Tridecylbenzenesulfonic acid, sodium salt	122,108	...	...	...
All other	26,084	2,950	1,666	.56

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION[1]	SALES[2]		
		QUANTITY[1]	VALUE	UNIT VALUE[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
ANIONIC--Continued				
Sulfonic acids (and salts thereof)--continued				
Benzene-, cumene-, toluene-, and xylensulfonates, total	113,587	97,327	24,967	$0.26
Cumenesulfonic acid, sodium salt	8,115	8,384	3,490	.42
Xylenesulfonic acid, ammonium salt	13,268	13,432	3,666	.27
Xylenesulfonic acid, sodium salt	70,651	63,386	13,470	.21
All other	21,553	12,125	4,341	.36
Ligninsulfonates and naphthalenesulfonates, total	1,060,057	994,456	94,849	.10
Diisopropylnaphthalenesulfonic acid, sodium salt	1,428	1,253	2,057	1.64
Ligninsulfonic acid, ammonium salt	7,244	6,999	657	.09
Ligninsulfonic acid, calcium salt	618,388	566,546	27,533	.05
Ligninsulfonic acid, chromium salt	81,947	79,514	13,596	.17
Ligninsulfonic acid, sodium salt	286,755	276,634	22,489	.08
All other	64,295	63,510	28,517	.45
Sulfosuccinamic acid derivatives	2,299	1,778	1,946	1.09
Taurine derivatives	2,068	1,512	2,997	1.98
Sulfonic acids having ester or ether linkages, total	76,270	32,776	41,349	1.26
Sulfosuccinic acid esters, total	21,848	18,777	20,990	1.12
Sulfosuccinic acid, bis(2-ethylhexyl)ester, Sodium salt	16,001	13,523	16,846	1.25
All other	5,847	5,254	4,144	.79
All other	54,422	13,999	20,359	1.45
All other sulfonic acids (and salts thereof)	35,521	35,056	21,900	.62
Sulfuric acid esters (and salts therof), total	709,005	229,886	154,860	.67
Acids, amides, and esters, sulfated	12,367	7,436	3,489	.47
Alcohols, sulfated, total	323,633	108,236	75,230	.70
Decyl sulfate, sodium salt	1,553	911	1,000	1.10
Dodecyl sulfate, ammonium salt	32,708	25,608	13,802	.54
Dodecyl sulfate, diethanolamine salt	1,881	1,771	1,141	.64
Dodecyl sulfate, magnesium salt	327	...	...	...
Dodecyl sulfate, sodium salt	43,483	40,136	27,093	.68
Dodecyl sulfate, triethanolamine salt	14,116	10,840	7,883	.73
2-Ethylhexyl sulfate sodium salt	1,499	1,526	1,909	1.25
Mixed linear alcohols, sulfated, ammonium salt	34,190	7,160	4,179	.58
Octyl sulfate, sodium salt	257	228	321	1.40
All other	193,619	20,056	17,902	.59
Ethers, sulfated, total	344,565	88,432	59,540	.67
Alkylphenols, ethoxylated and sulfated	7,870	6,330	6,903	1.09
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt	...	6,728	3,000	.45
Dodecyl alcohol, ethoxylated and sulfated, sodium salt	21,654	19,502	14,679	.75
Mixed linear alcohols, ethoxylated and sulfated ammonium salt	94,523	25,544	18,424	.72
Mixed linear alcohols, ethoxylated and sulfated, sodium salt	210,118	29,675	15,700	.53
All other	10,400	653	834	1.28
Natural fats and oils, sulfated, total	28,440	25,782	16,601	.64
Castor oil, sulfated, sodium salt	2,754	2,461	2,163	.88
Neatsfoot oil, sulfated, sodium salt	821	...	...	...
Soybean oil, sulfated, sodium salt	261	250	125	.50
Tall oil, sulfated, sodium salt	831	...	...	...
Tallow sulfated, sodium salt	1,018	801	327	.41
All other	22,784	22,270	13,986	.63
Other anionic surface-active agents	42,858	14,571	8,371	.57

See footnotes at end of table.

TABLE 1.--SUFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION[1]	SALES[2]		
		QUANTITY	VALUE	UNIT VALUE [3]
CATIONIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	456,071	322,099	348,878	$1.08
Amine oxides and oxygen-containing amines (except those having amide linkages), total	93,123	40,512	36,425	.90
Acyclic, total	83,774	32,995	28,657	.87
N,N-Bis(2-hydroxyethyl)octadecylamine	164	...	...	...
N,N-Dimethyldodecylamine oxide	...	1,490	1,024	.69
(Coconut oil alkyl)amine, ethoxylated	2,309	...	...	...
(9-Octadecenyl)amine, ethoxylated	1,278	1,053	1,000	.95
(Tallow alkyl)amine, ethoxylated	7,934	6,497	3,747	.58
N,N,N',N'-Tetrakis (2-hydroxethyl) ethylenediamine	...	66	94	1.43
All other	72,089	23,889	22,792	.94
Cyclic (including imidazoline and oxazoline derivatives, total	9,349	7,517	7,768	1.03
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline	...	1,191	1,462	1.23
1-(2-Hydroxyethyl-2-nor(coconut oil alkyl)-2-imidazoline	114	92	141	1.53
1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline	719	435	1,349	3.10
All other	8,516	5,799	4,816	.83
Amines and amine oxides having amide linkages, total	31,226	19,614	17,469	.89
Stearic acid-ethylenediamine condensate, monoethoxylated	143	140	116	.83
Tall oil acids polyalkylenepolyamine condensate	12,795	...	...	...
All other	18,288	19,474	17,353	.89
Amines, not containing oxygen (and salts therof), total	134,982	80,815	88,357	1.09
Amine salts	1,109	1,757	1,727	.98
Diamines and polyamines	26,575	20,146	32,733	1.62
Imidazoline derivatives	8,243	8,230	6,568	.80
N-(9-Octadecenyl)trimethylenediamine	1,082	969	1,106	1.14
N-Tallow alkyl)dipropylenetriamine	8,038	...	...	...
All other	9,212	10,947	25,059	2.29
Monoamines, total	107,298	58,912	53,987	.92
N,N-Dimethyloctadecylamine	1,790	1,753	2,098	1.20
(Hydrogenated tallow alkyl)amine	7,506	4,416	3,278	.74
9-Octadecenylamine	6,643	5,026	4,188	.88
Octadecylamine	2,434	1,522	1,799	1.18
(Soybean oil alkyl)amine	2,187	1,734	1,346	.78
(Tallow alkyl)amine	26,437	15,160	9,834	.65
All other	60,301	29,301	31,444	1.07
Quaternary ammonium salts, containing oxygen	37,902	34,114	31,817	.93
Quaternary ammonium salts, not containing oxygen Total	156,000	144,079	145,671	1.01
Acyclic, total	126,121	116,895	112,232	.96
Bis(hydrogenated tallow alkyl)dimethylammonium chloride	69,685	61,974	55,218	.89
Didecyldimethyl ammonium chloride	374	284	494	1.74
N,N,N',N',N'-Pentamethyl-N-(tallow alkyl)trimethylene-bis[ammonium chloride]	1,381	1,484	1,080	.73
Trimethyl(soybean oil alkyl) ammonium chloride	558	490	599	1.22
All other	54,123	52,663	54,841	1.04

See footnotes at end of table.

TABLE 1.--SUFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION[1]	SALES[2]		
		QUANTITY[1]	VALUE	UNIT VALUE[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*per pound*
CATIONIC--Continued				
Quaternary ammonium salts, not containing oxygen--Continued				
Benzenoid, total	29,885	27,184	33,439	$1.23
Benzyl (coconut oil alkyl)dimethylammonium chloride	369	336	437	1.30
Benzyldimethyl (mixed alkyl)ammonium chloride	15,539	14,527	19,286	1.33
Benzyltrimethylammonium chloride	3,389	2,816	2,230	.79
All other	10,588	9,505	11,486	1.21
Other cationic surface-active agents	2,832	2,965	29,049	9.80
NONIONIC				
Total	1,542,933	1,336,716	957,983	.71
Carboxylic acid amides, total	63,192	50,988	43,185	.85
Diethanolamine codensantes (amine/acid ratio=2/1), total	14,395	12,358	9,948	.81
Coconut oil acids	6,621	5,867	4,956	.84
Coconut oil and tallow acids	1,928	1,904	1,482	.78
Lauric and myristic acids	1,063	528	569	1.08
Oleic acid	821	637	445	.70
Steric acid	72	...	...	...
Tall oil acids	1,445	1,309	914	.70
Tallow acids	175	189	158	.83
All other	2,270	1,924	1,424	.74
Diethanolamine condensates (other amine/acid ratios), total	33,590	28,170	24,076	.85
Coconut oil acids (amine/acid ratio=1/1)	25,076	20,804	17,292	.83
Lauric acid (amine/acid ratio=1/1)	4,008	3,074	3,076	1.00
Lauric and myristic acids (amine/acid ratio=1/1)	1,892	1,900	1,816	.96
Linoleic acid (amine/acid ratio=1/1)	451	419	407	.97
Soybean oil acids (amine/acid ratio=1/1)	1,079	1,061	699	.66
Stearic acid (amine/acid ratio=1/1)	182	109	92	.84
All other	902	803	694	.86
Other carboxylic acid amides, total	15,207	10,461	9,161	.88
Coconut oil acid-ethanolamine condensate (amine/acid ratio=1/1)	5,369	3,509	2,836	.81
Coconut oil acid-ethanolamine condensate (amine/acid ratio=2/1)	539	...	...	...
Oleic acid ethanolamine condensate, ethoxylated	114	98	101	1.03
All other	4,716	3,411	2,735	.80
Carboxylic acid esters, total	264,212	214,449	171,781	.80
Anhydrosorbitol esters, total	33,184	31,293	22,730	.73
Anhydrosorbitol monolaurate	4,648	4,414	3,288	.74
Anhydrosorbitol mono-oleate	7,515	6,282	4,998	.80
Anhydrosorbitol monostearate	16,746	16,782	11,169	.67
Anhydrosobitol trioleate	2,524	1,946	1,478	.76
All other	1,751	1,869	1,797	.96
Diethylene glycol esters, total	1,534	1,012	908	.89
Diethylene glycol monolaurate	420	416	287	.69
Diethylene glycol monostearate	205	186	203	1.09
All other	909	410	418	1.02
Ethoxylated anhydrosorbitol esters, total	28,402	26,443	21,135	.80
Ethoxylated anhydrosorbitol monolaurate	6,354	6,379	5,347	.84
Ethoxylated anhydrosorbitol mono-oleate	6,976	6,573	5,198	.79
Ethoxylated anhydrosorbitol monostearate	10,901	9,396	7,287	.78
Ethoxylated anhydrosorbitol trioleate	1,986	1,872	1,604	.86
Ethoxylated anhydrosorbitol tristearate	1,128	1,192	855	.72
All other	1,057	1,031	844	.81

See footnotes at end of table.

TABLE 1.--SUFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION[1]	SALES[2]		
		QUANTITY[1]	VALUE	UNIT VALUE[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
NONIONIC--Continued				
Carboxylic acid esters--Continued				
Ethylene glycol distearate	3,741	3,445	2,200	$0.64
Ethylene glycol monostearate	2,617	2,328	1,891	.79
Glycerol esters, total	60,113	54,273	43,713	.81
Complex glycerol esters	11,042	9,356	7,555	.81
Glycerol esters of chemically defined acids, total	19,003	15,942	13,128	.82
Glycerol mono-oleate	5,983	4,481	3,746	.84
Glycerol monoricinoleate	46	41	58	1.42
Glycerol monostearate	12,079	11,079	8,938	.81
All other	895	341	386	1.13
Glycerol esters of mixed acids	30,068	28,975	23,030	.79
Natural fats and oils, ethoxylated, total	28,623	22,116	17,683	.80
Castor oil, ethoxylated	11,042	7,765	6,322	.81
Hydrogenated castor oil, ethoxylated	4,775	3,830	3,983	1.04
Lanolin, ethoxylated	1,944	1,259	1,081	.86
All other	10,862	9,262	6,297	.68
Polyethylene glycol esters, total	59,117	39,163	30,951	.79
Polyethylene glycol diester of tall oil acids	3,468	...	...	...
Polyethylene glycol dilaurate	1,174	1,066	1,084	1.02
Polyethylene glycol dioleate	2,864	1,471	1,073	.73
Polyethylene glycol monoester of tall oil acids	707	...	...	...
Polyethylene glycol monolaurate	5,087	4,414	3,754	.85
Polyethylene glycol mono-oleate	3,658	2,673	1,987	.74
Polyethylene glycol monostearate	6,406	5,678	4,544	.80
Polyethylene glycol sesquiester of coconut oil acids	766	...	...	...
Polyethylene glycol sesquiester of tall oil acid	2,728	2,385	1,695	.71
All other	32,259	21,466	16,814	.78
Polyglycerol esters, total	2,384	2,309	3,663	1.59
Polyglycerol mono-oleate	607	607	773	1.27
All other	1,777	1,702	2,890	.70
1,2-Propanediol monostearate	1,643	1,476	2,054	1.39
All other carboxylic acid esters	42,854	30,547	24,853	.81
Ethers, total	1,183,466	1,059,086	725,377	.68
Benzenoid ethers, total[4]	397,732	347,460	392,744	1.13
Dinonylphenol, ethoxylated	4,222	3,558	2,872	.81
Dodecylphenol, ethoxylated	13,310	12,929	7,572	.59
(Mixed alkyl) phenol-formaldehyde, alkoxylated	2,395	884	670	.76
Nonylphenol, ethoxylated	297,216	265,827	330,396	1.24
Nonylphenol, ethoxylated and propoxylated	344	474	557	1.17
n-Octylphenol, ethoxylated	1,835	1,637	985	.60
Phenol, ethoxylated	1,983	716	622	.93
All other	76,427	61,435	49,030	.80
Nonbenzenoid ethers, total	696,980	650,207	282,653	.43
Chemically-defined linear alcohols, ethoxylated, total	23,043	18,106	16,012	.88
Decyl alcohol, ethoxylated	7,840	5,638	3,130	.56
Dodecyl alcohol, ethoxylated	3,577	2,972	2,482	.84
9-Octadecenyl alcohol, ethoxylated	1,041	583	617	1.06
Octadecyl alcohol, ethoxylated	1,419	...	...	...
Oleyl alcohol, ethoxylated	2,551	2,359	3,069	1.30
All other	6,615	6,554	6,714	1.02
Mixed linear alcohols, alkoxylated, total	673,937	632,101	266,641	.42
Mixed linear alcohols, ethoxylated	626,189	590,069	243,318	.41
Mixed linear alcohols, ethoxylated and propoxylated	21,394	20,589	13,540	.66
All other	26,354	21,443	9,783	.46

See footnotes at end of table.

TABLE 1.--SUFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION[1]	SALES[2]		
		QUANTITY[1]	VALUE	UNIT VALUE[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
NONIONIC--Continued				
Ethers--Continued				
Other ethers and thioethers, total	88,754	61,419	49,980	$0.81
Poly(mixed ethylene, propylene) glycol	14,039	...	...	...
Tridecyl alcohol, ethoxylated	13,419	9,003	5,405	.60
All other	61,296	52,416	44,575	.85
Other nonionic surface-active agents	32,063	12,193	17,640	1.45

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[1] All quantities are given in terms of 100 percent organic surface-active ingredient.

[2] Sales include products sold as bulk surface-active agents only.

[3] Calculated from unrounded figures.

[4] The term "benzenoid" used in this report, describes any surface-active agent, except lignin derivatives, whose molecular structure includes 1 or more 6-membered carbocyclic or heteroxyclic rings with conjugated double bonds (e.g., the benzene ring or the pyridine ring).

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC	
Acyclic amphoteric surface-active agents, all other	DUP, ENJ, S(E), X.
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium chloride, disodium salt	BRD.
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium hydroxide, disodium salt	X.
Bis(2-hydroxyethyl)tallowammonium ethanoate	MIR.
3-[Caprylamidoethylene-(2-hydroxyethyl)amino-propionic acid	MIR.
Caprylamphopropionate	MOA.
1-Carboxyethyl-1-(2-ethoxycarboxyethyl)-2-cocoimidazolinium, disodium salt	SBC.
1-Carboxyethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolinium hydroxide, sodium derivative, sodium salt	MIR.
1-Carboxyethyl-1-(2-hydroxyethyl)-2-nonyl-2-imiazolinium hydroxide, sodium derivative, sodium salt	MIR.
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt	DUP.
(Carboxymethyl)3-(coconut oil amido)propyl-dimethylammonium hydroxide, inner salt	CYL, HLI, JOR, MIR, ONX, SCP, SHX, WM.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium hydroxide, sodium derivative, sodium salt	BRD, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolinium hydroxide, sodium derivative, sodium salt	MIR.
Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium hydroxide, sodium derivative, sodium salt	BRD, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium derivative, sodium salt	MIR, SHX.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazoliniumhydroxide, sodium derivative, sodium salt	MIR.
Cocoamidoamphoglycinate	MOA

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED	
Cocoamidopropyl betaine	CRD.
Cocoamidopropyl betaine	MOA.
3-3-(Cocoamidopropyl)dimethylammonio-2-hydroxypropane sulfonate	MIR.
(3-Cocoamidopropyl)(2-hydroxy-3-sulfopropyl)dimethyl, hydroxide, inner salt	SBC.
(3-Cocoamidopropyl)-(2-hydroxy-3-sulfopropyl)-dimethyl ammonium hydroxide, inner salt	SHX.
3-Cocoamidopropyl-2-hydroxy-3-sulfopropyldimethyl ammonium hydroxide, inner salt	SCP.
Cocoamphocarboxyglycinate	MOA.
Cocoamphocarboxypropionate	MOA.
Cocoamphopropionate	MOA.
N-(Coconut oil alkyl)-β-alanine, partial sodium salt	SCP.
N-(Coconut oil alkyl)-β-alanine, sodium salt	DUP.
3-(Coconut oil alkyl)amidoethylene-(2-hydroxyethyl)-aminopropionic acid	MIR.
N-(Coconut oil alkyl)aminobutyric acid	ARC.
N,N-Di(hydroxyethyl)-n-carboxymethyl tallow ammonium quat,inner salt	SHX.
Di-(hyrogenated tallow)methylammonium tallowate	SHX.
Dimethyloleylammonium ethanoate	MIR.
Dimethyltallowammonium ethanoate	MIR.
N-Dodecyl-3-iminodipropionic acid	MOA.
N-Dodecyl-3-iminodipropionic acid, disodium salt	AAC, MIR, MOA, SCP.
N-Dodecyl-3-imino-dipropionic acid, monosodium salt	MIR.
N-Dodecyl-3-iminodipropionic acid, sodium and cocoamphocorboxy-glycinate salt	AAC.
N-Dodecyl-3-iminopropionic acid, monosodium salt	SCP.
N-(Dodecyl and tetradecyl)-β-alanine	SCP.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt	BRD
1-(2-Hydroxyethyl)-2-heptyl-3-carboxyethyl-imidazoline,sodium salt	SCP.
1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-capryl-2-imidazolinium hydroxide	MIR.
1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide	MIR.
1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl-2-oleyl-2-imidazolinium hydroxide	MIR.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED	
1-(2-Hydroxyethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide	MIR
Isostearic amphopropionate	MOA.
Laurylamidopropyl betaine	MOA.
Laurylamphoglycinate	MOA.
Mixed acyclic primary amines, ethoxylated and sulfated, sodium salt	RH.
(Mixed alkyl)sulfobetaine	ACC, BRD, JOR, MOA, X.
Oleic acid-ethylenediamine condensate, propoxylated and sulfated, sodium salt	JOR, MOA.
Oleyl betaine	SCP.
Polypeptide ammonium salt	STP.
Polypeptide, sodium salt	STP.
1-(Sodium carboxyethylene)-1-(sodium carboxymethyleneoxyethylene)-2-nor-(tall oil fatty acids)-2-imidazolinium hydroxide	MIR.
1-(Sodium carboxymethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-(coconut oil fatty acids)-2-imidazolinium lauryl sulfate	MIR.
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt	MIR, MOA, SCP.
Tridecyloxypoly(ethyleneoxy)propionic acid, potassium salt	MRV.
ANIONIC	
CARBOXYLIC ACIDS (AND SALTS THEREOF):	
AMINE SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS:	
Coconut oil acids, diethanolamime salt	SHX, VAL.
Coconut oil acids, ethanolamine salt	SBP.
Coconut oil acids, triethanolamine salt	DA.
Isostearic acid, triethanolamine salt	PCI.
Octanoic acid, triethanolamine salt	X.
Oleic acid, diethylamine salt	WTC.
Oleic acid, morpholine salt	X.
Oleic acid, triethanolamine salt	CPC, X.
Rosin acids, triethanolamine salt	CPC.
Stearic acid,N,N,N',N'-tetrakis(2-hydroxyethyl)-ethylenediamine salt	ICI.
Stearic acid, triethanolamine salt	AAC, CPC, GLY, PCI, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
CARBOXYLIC ACIDS (AND SALTS THEREOF)--CONTINUED	
AMINE SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS--CONTINUED	
Tall oil acids, diethanolamine salt (Condensate)	SHX.
Tallow acids, ethanolamine salt	SBP.
Tallow acids, triethanolamine salt	SBP.
Triethylamine salt	STC.
Amine salts of fatty, rosin, and tall oil acids, all other	S(E), WM.
CARBOXYLIC ACIDS HAVING AMIDE, ESTER, OR ETHER LINKAGES:	
5(or 6)-Carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, reaction products with castor oil	X.
N-(Coconut oil acyl)sarcosine, sodium salt	HMP, SFS.
Dodecyloxypoly(ethyleneoxy)acetic acid, sodium salt	MIR.
N-Lauroylsarcosine, sodium salt	HMP.
Mixed(secondary linear alcohol)polyethylene propionic acid, sodium salt	CHP.
N-Oleoylsarcosine, sodium salt	GAF.
Carboxylic acids with amide, ester or ether linkage, other	WTC.
POTASSIUM AND SODIUM SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS:	
Animal grease, sodium salt	NMC.
5(or 6)-Carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, sodium salt	X.
*Castor oil acids, potassium salt	CAS, DA, SEA.
Castor oil acids, sodium salt	CAS, DEX.
*Coconut oil acids, potassium salt	AGP, CON, ESS, HEW, HIP, HNT, LAS, LUR, NMC, PG, PNX, SOP.
*Coconut oil acids, sodium salt	BSW, CON, CP, HEW, LAS, LEV, NMC, NPR, PG, SOP, X.
Corn oil acids, potassium salt	HNT, NMC.
2-Ethylhexanoic acid, potassium salt	UPF.
Heptanoic acid, potassium salt	X.
Isostearic acid, isoproxy titanium salt	KPI.
Lauric acid, sodium salt	HEW.
Mixed vegetable fatty acids, potassium salt	EFH, GRL, QCP.
Mixed vegetable fatty acids, sodium salt	NMC, QCP.
Mixed vegetable fatty acids, triethanolamine salt	EFH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
CARBOXYLIC ACIDS (AND SALTS THEREOF)--CONTINUED	
POTASSIUM AND SODIUM SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS--CONTINUED	
Naphthenic acid, potassium salt	WBG.
Oleic acid, ammonium salt	CCC.
Oleic acid, epoxidized, ammonium salt	SCP.
Oleic acid, potassium salt	BSW, HAL, HNT, PG, WBG, X.
*Oleic acid, sodium salt	BSW, DA, LAS, USR, WBG, WTC.
Olive oil acids, sodium salt	HNT.
Palm kernel oil acids, potassium salt	PG.
Palm kernel oil acids, sodium salt	NMC, PG.
*Palm oil acids, sodium salt	BSW, HEW, LAS.
Rosin acids, potassium salt	ARZ, X.
Rosin acids, sodium salt	ARZ, SLM(E), X.
Soybean oil acids, potassium salt	PNX.
Soybean oil acids, sodium salt	LUR.
Stearic acid, ammonium salt	BSW.
*Stearic acid, potassium salt	BSW, CCC, CON, DA, HEW, WTC.
Stearic acid, sodium salt	CCC, CON, DA, NOC, SYP, WTC.
Tall oil acids, potassium salt	CON, DA, DAN, DYS, ESS, HIP, HNT, PNX, SOP.
Tall oil acids, sodium salt	CON, GDC, NMC, WVA, X.
Tallow acids, potassium salt	AGP, DYS, PG, PNX.
*Tallow acids, sodium salt	BSW, CON, CP, HEW, LAS, LEV, NMC, NPR, PG, PRX(E), X.
Potassium and sodium salts of fatty, rosin, and tall oil acids, all other	DA, USR.
OTHER CARBOXYLIC ACIDS:	
Carboxylic acids, all other	STC.
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF):	
ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED:	
Amyalcohol, ethoxylated and phosphated	GAF.
Butyl alcohol, ethoxylated and phosphated	GAF.
*Decyl alcohol, ethoxylated and phosphated	GAF, MCB, MCP, RPC, TCH.
Decyl alcohol, potassium salt	RPC.
Dinonylphenol, ethoxylated and phosphated	CPC, GAF, WAY.
Dodecyl alcohol, ethoxylated and phosphated	GAF, JOR, MET(E).
Dodecylphenol, ethoxylated and phosphated	DEX, GAF.
2-Ethylhexanol and ethoxylated nonylphenol, polyphosphated	CCC.

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TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED--CONTINUED:	
2-Ethylhexanol and ethoxylated nonylphenol, polyphosphated, sodium salt	CCC.
2-Ethylhexanol, ethoxylated and phosphated	DA, STC, WAY.
2-Ethylhexanol, ethoxylated, phosphated, potassium salt	CHP.
2-Ethylhexanol, phosphated	MCB.
Hexylalcohol, ethoxylated and phosphated	GAF.
Hexylalcohol, phosphated, potassium salt, solubilized	MCB.
Lauryl alcohol, ethoxylated and phosphated	GAF.
Mixed linear alcohol, alkoxylated and phosphated, potassium salt	PCI.
Mixed linear alcohols, ethoxylated, butoxylated and phosphated	SCP.
*Mixed linear alcohols, ethoxylated and phosphated	CHP, CPC, CRT, CYL, FER, GAF, HIP, HRT, JOR, MCB, MOA, MRV, RPC, SCP, TCH, WTC, X, X.
Mixed linear alcohols, ethoxylated and phosphated, sodium salt	CHP.
Mixed tridecyl alcohol and 2-ethylhexanol, phosphated, potassium salt	CHP.
*Nonylphenol, ethoxylated and phosphated	ARL, CRT, CTL, CYL, DA, DEX, EFH, ESS, FTX, GAF, GDC, HRT, MCB, MCP, MET(E), MOA, MZC, SCP, SHX, SOP, STC, TCC, VPC, WAY, WTC, WVA, X.
Nonylphenol, ethoxylated and phosphated, barium salt	WTC.
9-Octadecenyl alcohol, ethoxylated and phosphated	GAF, JOR, STC.
9-Octadecyl alcohol, ethoxylated and phosphated	GAF.
Octylphenol, ethoxylated and phosphated	RH, WTC.
Octylphenol, ethoxylated and phosphated, magnesium salt	ONX.
Phenol, ethoxylated and phosphated	DEX, GAF, MIL, MOA, MZC, TCH, WTC.
Phenol, ethoxylated and phosphated, potassium salt	MCB.
Polyhydric alcohol, ethoxylated and phosphated	GAF, JOR, PH.
Tridecyl alchol, ethoxylated and phosphated, polyalkylene polyamine salt	X.
*Tridecyl alcohol, ethoxylated and phosphated	DAN, DEX, GAF, HIP, MIL, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED--CONTINUED:	
Tridecyl alcohol, ethoxylated and phosphated, potassium salt	DEX.
Alcohols and phenols, alkoxylated and phosphated or polyphosphated, all other	GAF.
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED:	
Butyl methyl pyrophosphate isopropoxy titanium salt octyl phosphite adduct	KPI.
Butyl octyl pyrophosphate oxyacetate titanium salt octyl phosphite adduct	KPI.
Butyl phosphate, potassium salt	DUP.
Decyl and octyl phosphate	MZC.
2-Ethylhexyl phosphate	CHP, GAF, MCP.
*2-Ethylhexyl phosphate, sodium salt	CHP, DAN, WTC.
2-Ethylhexyl polyphosphate	SFS.
2-Ethylhexyl polyphosphate, sodium salt	DEX, SFS.
Hexyl phosphate	ICI.
Hexyl phosphate, potassium salt	ICI, STC.
Methyl butyl phosphate ethylenedioxy titanium salt/n,n-dimethylaminoethylmethacrylate salt	KPI.
Methylbutyl pyrophosphate, ethylenedioxy titanium salt	KPI.
Mixed alkyl phoshate, sodium salt	X.
*Mixed alkyl phosphate	DUP, SCP, SFS, STC, WTC, X.
Mixed alkyl phosphate, alkylamine salt	X.
Mixed alkyl phosphate, diethanolamine salt	DUP, SCP.
Mixed alkyl phosphate, potassium salt	STC, X.
Mixed alkyl phosphate, triethanolanine salt	X.
Octyl phosphate	SCP, WTC.
Octyl phosphate, alkylamine salt	SCP, X.
Octyl phosphate, ethylenodioxy titanium salt	KPI.
Octyl phosphate, isoproxy titanium salt	KPI.
Octyl phosphate oxoethylenedioxy titanium salt	KPI.
Octyl phosphate, potassium salt	DEX.
Octyl polyphosphate	DEX.
Octyl polyphosphate, potassium salt	CHP.
Octyl pyrophosphate, ethylenedioxy titanium salt	KPI.

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TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED--CONTINUED	
Octyl pyrophosphate, ethylenedioxy titanium salt/dimethylaminomethacrylate salt	KPI.
Octyl pyrophosphate, isoproxy titanium salt	KPI.
Octyl pyrophosphate, oxoethylenedioxy titanium salt	KPI.
Octyl pyrophosphate oxoethylenedioxy titanium salt/N,N-dimethylaminobutanol salt	KPI.
Tridecyl alcohol/nonyl phenol ethoxylate, coester phosphate	MET(E).
Phosphated and polyphosphated alcohols, all other	DA, HRT, WTC.
OTHER PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS:	
Blend of fatty and phosphate esters	MIL.
Glycerol, ethoxylated and phosphated	X.
Glycerol monoester of mixed fatty acids, phosphated	WTC.
Hydroxyamine, phosphate ester and salts	SCP.
Polyoxyalkylate(fatty alcohol), phosphate ester	BAS.
Stearyl amine polyphosphoric acid, ethoxylated	GDC.
Phosphoric and polyphosphoric acid esters, all other	X, X.
SULFONIC ACIDS (AND SALTS THEREOF):	
ALKYLBENZENESULFONATES:	
DODECYLBENZENESULFONATES:	
Dodecylbenzemesulfonic acid, monoethanolamine salt	FTX, RPC.
*Dodecylbenzenesulfonic acid	CTL, HLI, JLP, LEV, MON, ONX, PIL, PLX, PRX(E), STP, TCI, TEN, VST, WTC, WVA, X.
Dodecylbenzenesulfonic acid, (Mixed alkyl)amine salt	ECC, HIP, MOA, X.
*Dodecylbenzenesulfonic acid, ammonium salt	CCC, ONX, X.
*Dodecylbenzenesulfonic acid, calcium salt	ICI, RH, STC, STP, TMH, WTC, X.
Dodecylbenzenesulfonic acid, diethanolamine salt	VPC, WTC.
Dodecylbenzenesulfonic acid, isopropanolamine salt	PIL.
*Dodecylbenzenesulfonic acid, isopropylamine salt	CIN, CTL, ICI, STP, WTC.
Dodecylbenzenesulfonic acid, isoproxy titanium salt	KPI.
Dodecylbenzenesulfonic acid, potassium salt	GDC, PRX(E).
*Dodecylbenzenesulfonic acid, sodium salt	AAC, BLA, CP, CTL, DUP, ECC, HLI, JLP, LEV, NMC, ONX, PG, PIL, PLX, PNX, RPC, SOP, STP, TCH, TEN, VST, WTC, WVA.
*Dodecylbenzenesulfonic acid, triethanolamine salt	AAC, BRD, CCC, CPC, CTL, ESS, FTX, HLI, ONX, PIL, PNX, STP, WTC.
Dodecylbenzene sulfonates, all other	MRV, WTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
ALKYLBENZENESULFONATES--CONTINUED	
OTHER ALKYLBENZENESULFONATES:	
Benzenesulfonic acid, mixed linear (C$_{9-14}$)	LEV.
Decylbenzenesulfonic acid, sodium salt	CRT.
Tridecylbenzenesulfonic acid	PLX.
*Tridecylbenzenesulfonic acid, sodium salt	BLA, CMT, CP, LAS, NPR, PG, STP.
Alkylbenzenesulfonates, all other	WTC.
BENZENE-, CUMENE-, TOLUENE-, AND XYLENESULFONATES:	
Benzenesulfonic acid, 3,3'-(1-methylethylidene)-bis(6-hydroxydisodium salt), polymer with formaldehyde and 4,4'-sulfonylbis(phenol)	DA.
Cumenesulfonic acid, ammonium salt	DA, NES.
*Cumenesulfonic acid, sodium salt	NES, STP, WTC.
Toluenesulfonic acid, potassium salt	NES.
Toluenesulfonic acid, sodium salt	NES, ONX, PG, VST, WTC.
*Xylenesulfonic acid, ammonium salt	NES, STP, WTC.
*Xylenesulfonic acid, sodium salt	ICI, NES, PIL, SDC, STP, WTC.
LIGNINSULFONATES:	
*Ligninsulfonic acid, ammonium salt	MAR, PSP, RAY, SPA.
*Ligninsulfonic acid, calcium salt	FPC, LKY, MAR, PSP.
*Ligninsulfonic acid, chromium salt	MAR, PSP, RAY.
Ligninsulfonic acid, iron salt	MAR, PSP.
Ligninsulfonic acid, manganese salt	MAR.
Ligninsulfonic acid, mixed chromium and iron salts	PSP.
Ligninsulfonic acid, potassium salt	PSP.
*Ligninsulfonic acid, sodium salt	MAR, PSP, RAY, WVA.
Ligninsulfonic acid, zinc salt	MAR, PSP.
NAPHTHALENESULFONATES:	
Butylnaphthalenesulfonic acid, sodium salt	DA, ECC, UDI.
Butyl-o-phenylphenol sulfonic acid, sodium salt	RBC.
Di(C$_5$-C$_6$ alkyl)naphthalenesulfonic acid	X.
Dibutylnaphthalenesulfonic acid	UDI.
*Diisopropylnaphthalenesulfonic acid, sodium salt	DA, DUP, UDI.
Isopropylnaphthalenesulfonic acid	UDI.
Methylnaphthalenesulfonic acid, sodium salt	CPC, DA, UDI.
Methylnonylnaphthalenesulfonic acid, sodium salt	UDI.
Naphthalenesulfonic acid, ammonium salt	DA.
4,4'-Sulfonyldiphenolnaphthalenesulfonic acid	PCI.
Naphthalenesulfonates, all other	HAL, ICI, PCI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
SULFONIC ACIDS HAVING AMIDE LINKAGES:	
SULFOSUCCINAMIC ACID DERIVATIVES:	
Cocoamidoisopropylsulfosuccinamic acid, disodium salt	BRD.
N-(Coconut oil alkyl)sulfosuccinamic acid, disodium salt	SCP.
N-(1,2-Dicarboxyethyl)-N-octadecylsulfosuccinamic acid, tetrasodium salt	ACY, MOA.
Lauric alkanolamidesulfosuccinate, sodium salt	TCH.
N-Octadecylsulfosuccinamic acid, disodium salt	ACY, WTC.
Oleamido sulfosuccinamic acid, disodium salt	SBC.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid	WTC.
TAURINE DERIVATIVES:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt	FTX, GAF.
N-Methyl-N-oleoyltaurine, sodium salt	CPC, GAF, HRT, STC.
N-Methyl-N-palmitoyltaurine, sodium salt	GAF.
N-Methyl-N-(tall oil acyl)taurine, sodium salt	CCC, FTX, GAF, WVA.
ALL OTHER SULFONIC ACIDS HAVING AMIDE LINKAGES:	
Sulfonic acids having amide linkages, all other	STC.
SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES:	
SULFOSUCCINIC ACID ESTERS:	
Sulfosuccinic acid, monoricinolamide ethyl disodium salt	TCH.
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl)-ester, sodium salt	MOA, NSC.
*Sulfosuccinic acid, bis(2-ethylhexyl)ester, sodium salt	ACC, ACY, CCC, CHP, CRT, ECC, FTX, HDG, MCP, MOA, RH, RPC, SCO, SCP, STC, WTC.
Sulfosuccinic acid, dihexyl ester, sodium salt	ACY, MOA.
Sulfosuccinic acid, diisodecyl ester, sodium salt	ACY.
Sulfosuccinic acid, diisooctyl ester, sodium salt	DA, SOS.
Sulfosuccinic acid, dioctyl ester, sodium salt	MOA.
Sulfosuccinic acid, dipentyl ester, sodium salt	ACY.
Sulfosuccinic acid, dis(diisobutyl)ester, amidodisodium salt	MOA.
Sulfosuccinic acid, ditridecyl ester, sodium salt	ACY, MOA.
Sulfosuccinic acid, (coconut oil alkyl)-iminoisopropanol half-ester, sodium salt	MOA.
Sulfosuccinic acid, mixed linear alcohols, ethoxylate ester, sodium salt	AAC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES--CONTINUED	
SULFOSUCCINIC ACID ESTERS--CONTINUED	
Sulfosuccinic acid, monolauramido ester, disodium salt	MOA.
Sulfosuccinic acid, monolauryl(polyethoxy)ester, disodium salt	TCH.
Sulfosuccinic acid, monooleamidopolyethyleneglycol ester, disodium salt	SCP.
Sulfosuccinic acid esters, all other	WTC.
ALL OTHER SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES:	
Coconut oil acids, 2-sulfoethyl ester, sodium salt	FTX, GAF, JOR, LEV.
Dipolyetherdisulfonic acid, diethanolamine salt	VPC.
Dodecyldiphenyloxidedisulfonic acid	X.
Dodecyldiphenyloxidedisulfonic acid, disodium salt	CTL, DOW, X.
Dodecyl sulfoacetate, sodium salt	STP.
Glycerol monostearate sulfoacetate, sodium salt	WTC.
Iso-octylphenol, ethoxylated and sulfonated, sodium salt	GAF, RH.
n-Octylphenol, ethoxylated and sulfonated, sodium sodium salt	AAC, CRT, PG.
Sulfonic acids with ester linkages, all other	WTC.
Sulfonic acids with ether linkages, all other	DA, WTC.
OTHER SULFONIC ACIDS:	
Allyl sulfonate, sodium salt	ARD.
Mixed alkanesulfonic acid	X.
(Mixed alkane)sulfonic acid	X.
(Mixed alkane)sulfonic acid, sodium salt	AAC, CCL, DUP, ONX, WTC, WVA, X, X.
n-Octanesulfonic acid, sodium salt	ONX.
Oleyloxyethyldiamide oxypropanol sulfonic acid	S(E).
Petroleumsulfonic acid, water soluble (Acid layer), sodium salt	PIL, WTC.
Styrene maleic anhydride copolymers, sulfonated sodium salt	X.
Tall oil, sulfated, potassium salt	X.
Triglycerides, sulfonated	AZS.
Sulfonic acids, all other	CLU, HAL, SLM(E), STP, WTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFURIC ACID ESTERS (AND SALTS THEREOF):	
ACIDS, AMIDES, AND ESTERS, SULFATED:	
CARBOXYLIC ACID ESTERS (EXCEPT NATURAL FATS AND OILS), SULFATED:	
ESTERS OF SULFATED OLEIC ACID:	
Butyl oleate, sulfated, sodium salt	HIP, ICI, MCP, MRV, NSC.
Butyl and propyl oleate, sulfated, sodium salt	CRT.
Glycerol trioleate, sulfated, sodium salt	SCP.
Isopropyl oleate, sulfated, sodium salt	DEX.
Methyl oleate, sulfated, sodium salt	DA, ICI.
Oleic acid, sulfated	ACT.
Oleic acid, sulfated, disodium salt	TEN.
Oleic acid, sulfated, sodium salt	ACY.
Propyl oleate, sulfated, sodium salt	CHP, MRV.
Esters of sulfated oleic acid, all other	DA.
OTHER SULFATED ESTERS:	
Glycerol monoester of coconut oil acids, sulfated, sodium salt	CP.
Mixed fatty acids, sulfated, sodium salt	SCO.
9-Octadecenyl acetate, sulfated, sodium salt	DUP.
Tall oil acids, sulfated, sodium salt	ICI.
OTHER SULFURIC ACID ESTERS:	
Isobutyl phthalate	SHX.
ALCOHOLS, SULFATED:	
Decyl and octyl sulfate, sodium salt	TCH.
Decyl sulfate, ammonium salt	HLI.
*Decyl sulfate, sodium salt	AAC, CRT, HLI, ONX, SCP.
DODECYLSULFATE SALTS:	
*Dodecyl sulfate, ammonium salt	AAC, BRD, CTL, CYL, HLI, JRG, LEV, ONX, STP, TCH, TNI, WTC, WVA.
*Dodecyl sulfate, diethanolamine salt	BRD, CYL, DUP, JRG, ONX, STP.
Dodecyl sulfate, N,N-diethylcyclohexylamine salt	DUP.
Dodecyl sulfate, isopropanolamine salt	BRD, JRG.
*Dodecyl sulfate, magnesium salt	AAC, BRD, CYL, HLI, ONX, WTC.
Dodecyl sulfate, potassium salt	PG.
*Dodecyl sulfate, sodium salt	AAC, BRD, DUP, HLI, ONX, STP, WTC, WVA.
*Dodecyl sulfate, triethanolamine salt	AAC, BRD, CYL, HLI, ONX, SHX, STP, TCH, TNI, WTC, WVA.
3,9-Diethyl-6-tridecyl sulfate, sodium salt	NCC.
*2-Ethylhexyl sulfate, sodium salt	AAC, BRD, NCC, PCI, SCP, TCH, WTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
ALCOHOLS, SULFATED--CONTINUED	
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt	NCC.
Hexadecyl sulfate, sodium salt	AAC, CTL.
Hexyl sulfate, potassium salt	DEX.
Lauryl sulfate, sodium salt	AZS, MOA.
Linear alcohols, sulfated, all other	WTC.
*Mixed linear alcohols, sulfated, ammonium salt	CP, NTL, ONX, PG, S(E), SCP, WTC, X.
Mixed linear alcohols, sulfated, diethanolamine salt	SCP.
Mixed linear alcohols, sulfated, magnesium salt	SCP.
Mixed linear alcohols, sulfated, mixed diethanolamine/triethanolamine salt	SCP.
Mixed linear alcohols sulfated, mixed sodium/cocodiethanolamine salts	AAC.
Mixed linear alcohols, sulfated, sodium salt	AAC, DA, DUP, PG, SCP, WTC.
Mixed linear alcohols, sulfated, triethanolamine salt	CTL, ONX, PG, SCP, WTC.
Naphthalene-formaldehyde condensate, sulfated, sodium salt	UDI.
*Octyl sulfate, sodium salt	AAC, APX, DUP.
Oleyl sulfate, sodium salt	DUP.
Polyglycidol sulfate	GAF.
Tridecyl sulfate, sodium salt	AAC.
ETHERS, SULFATED:	
ALKYLPHENOLS, ETHOXYLATED AND SULFATED:	
(Mixed alkyl)phenol, ethoxylated and sulfated, sodium salt	X.
1-Naphthol, ethoxylated and sulfated, free acid	TCH.
Nonylphenol, ethoxylated and phosphated, partial sodium salt	GAF.
Nonylphenol, ethoxylated and sulfated, ammonium salt	GAF, STP.
Nonyl phenol, ethoxylated and sulfated, monoethanolamine salt	PCI.
Nonylphenol, ethoxylated and sulfated, sodium salt	GAF, WTC.
Octylphenoxy polyethoxy ethyl sulfate	RH.
Sulfated cyclic ethers, all other	WVA.
Decyl alcohol, propoxylated and sulfated, sodium salt	APX.
*Dodecyl alcohol, ethoxylated and sulfated, ammonium salt	AAC, HLI, MOA, ONX, STP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
ETHERS, SULFATED--CONTINUED	
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt	AAC, CTL, CYL, HLI, ONX, SCP, STP, TCH.
Hexyl alcohol, propoxylated and sulfated, sodium salt	APX.
Isobutanol, ethoxylated and sulfated, ammonium salt	X.
Mixed linear alcohol, ethoxylated and sulfated, mixed sodium and cocoamphocarboxy glycinate salts	AAC.
*Mixed linear alcohols, ethoxylated and sulfated, ammonium salt	PG, SCP, SHC, STP, VST, WTC, X, X.
Mixed linear alcohols, ethoxylated and sulfated, diethanolamine salt	SCP.
Mixed linear alcohols, ethoxylated and sulfated, potassium salt	SVC.
*Mixed linear alcohols, ethoxylated and sulfated, sodium salt	AAC, BRD, DUP, GAF, ONX, PG, PIL, SCP, SHC, SHX, STP, TCH, TCI, VST, WTC, WVA.
Tridecyl alcohol, ethoxylated and sulfated, ammonium salt	ARC.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt	AAC.
NATURAL FATS AND OILS, SULFATED:	
*Castor oil, sulfated, sodium salt	ACT, ACY, APX, ARL, CRT, DA, DEX, HIP, ICI, LUR, MRV, SCO, SCP, SLM(E), WHW.
Coconut oil, sulfated, sodium salt	ACY, CIN, MRD.
Cod oil, sulfated, sodium salt	ACT, SEA, WHW.
Grease, other than wool, sulfated, sodium salt	WHW.
Herring oil, sulfated	SLM(E).
Herring oil, sulfated, sodium salt	SEA, SLM(E), WHW.
Lard, sulfated, sodium salt	CRT, MRD, WHW.
Mixed fish oils, sulfated, ammonium salt	CIN.
Mixed fish oils, sulfated, bisulfite salt	CIN.
Mixed fish oils, sulfated, sodium salt	CIN, MRD, SLM(E).
Mixed vegetable oils, sulfated, sodium salt	CIN, CPC.
Mustard seed oil, sulfated, sodium salt	DA.
*Neatsfoot oil, sulfated, sodium salt	CIN, SEA, SLM(E).
Peanut oil, sulfated, sodium salt	ACY.
Pecan oil, sulfated, sodium salt	CRT.
Pine oil, sulfated	SCM.
Ricebean oil, sulfated, sodium salt	DA.
*Soybean oil, sulfated, sodium salt	ACT, SEA, WHW.
*Tall oil, sulfated, sodium salt	ACT, APX, CIN, SOS, WHW.
*Tallow, sulfated, sodium salt	ACY, CCC, DA, ECC, LUR, MRD, NSC, SLM(E), SOS, WHW.
Sulfuric acid esters, all other	BFP, DA, SLM(E).

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
OTHER ANIONIC SURFACE-ACTIVE AGENTS:	
Alkylalcohol ethoxylated and carbonated, sodium salt	S(E).
Blend of hydrocarbons and esters	MIL.
Ethoxylated acetic acid, sodium salt	S(E).
Half-phthalic acid ester of tallow alkanolamide/ monoglyceride	EFH.
Lignin, sodium salt	WVA.
Maleated esterified tall oil	EMP.
Maleated linseed oil	EMP.
Mixed linear alcohols, ethoxylated and carbonated, sodium salt	S(E).
Tridecyl alcohol, ethoxylated and carbonated, sodium sodium salt	S(E).
Anionic surface-active agents, all other	DAN, DUP, MIR, SLM(E).
CATIONIC	
AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES):	
ACYCLIC:	
N,N-Bis(2-Hydroxyethyl)(coconut oil alkyl)amine oxide	ARC.
*N,N-Bis(2-Hydroxyethyl)octadecylamine	ARC, MET(E), SHX.
N,N-Bis(2-Hydroxyethyl)(tallow alkyl)amine	ARC, MZC, SHX.
N,N-Bis(2-Hydroxyethyl)(tallow alkyl)amine acetate	MZC.
(Coconut oil alkyl)amine, ethoxylated	ARC, EMJ, MZC, SHX, SVC, TCH, X.
(Coconut oil alkyl)amine, ethoxylated, oleate	BRD.
Cocoyl amidopropyl dimethylamine oxide	ARC, SCP.
Diethylenetriamine, ethoxylated and propoxylated	BAK.
Diethylenetriamine, propoxylated	BAK.
N,N-Dimethyldecylamine oxide	BRD.
*N,N-Dimethyldodecylamine oxide	BRD, HLI, JOR, PG, SBC, SHX, X.
N,N-Dimethylhexadecylamine oxide	ARC, BRD, JOR, ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine oxide	ARC.
N,N-Dimethyl(mixed alkyl)amine oxide	PG, S(E).
N,N-Dimethyl oleyl amine oxide	SCP.
Ethylenediamine, alkoxylated	X.
Hexyloxypropyl amine	DUP.
(Hydrogenated tallow alkyl)amine, ethoxylated	EMJ, SHX.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)- ethylenediamine	ONX, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES)--CONTINUED	
ACYCLIC--CONTINUED	
3-(3-Isodecyloxy)propylaminopropyl amine	SHX.
Methoxypropylamine	AZS.
3-(Mixed alkoxy)propylamine, ethoxylated oxides	SHX.
3-(3-Mixed alkoxy)propylaminopropyl amine	SHX.
(Mixed alkyl)amine, ethoxylated	ICI, RH, SHX.
(Mixed alkyl)oxypropylamine	AZS.
Mixed tert-alkyl primary amines, ethoxylated	BAK.
Myristamine oxide	SBC.
*(9-Octadecenyl)amine, ethoxylated	ARC, GAF, MET(E), TCH, X.
Octadecylamine, ethoxylated	ARC, MET(E), TCH.
3-Octyloxy and 3-decyloxy-propylamine	ARC.
Oleylamine, ethoxylated	MCB.
Polyalkylene polyamine, ethoxylated	X.
Polyether amine, ethoxylated	RH.
Polyethylenepolyamine, alkoxylated	BAS.
(Soybean oil alkyl)amine, ethoxylated	ARC, ENJ, MCB, SHX, SVC.
*(Tallow alkyl)amine, ethoxylated	ACR, BAS, DUP, ENJ, GAF, MCB, MRV, S(E), SHX, STC, TCH, WTC, WVA, X.
(Tallow alkyl)amine, propoxylated	ARC.
N-(Tallow alkyl)trimethylenediamine, ethoxylated	ARC, ENJ.
N-(Tallow alkyl)trimethylenediamine, propoxylated	ARC.
Tallow ethyl alkylamine, ethoxylated, sulfate	RPC.
Tetraethylene pentamine, ethoxylated	TX.
*N,N,N',N'-Tetrakis(2-hydroxyethyl)ethylenediamine	ARC, MZC, X.
N,N,N',N'-Tetrakis(2-hydroxypropyl)-ethylenediamine, propoxylated and ethoxylated	BAS.
3-(3-Tridecyloxy)propylaminopropyl amine	SHX.
Triethanolamine, ethoxylated	MIL, TCH.
Triethanolamine salicylate	RSA.
Triethanolamine trioleate	EFH.
Amine oxides and oxygen-containing amines (Except those with amide linkages), acyclic, all other	BAS, DA, ENJ, SDH, X.

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TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES)--CONTINUED	
CYCLIC:	
Aniline, ethoxylated	MIL.
2-Butenedioic acid-(ξ)-diamine - 1-(2-aminoethyl)-2-(tall oil alkyl)-2-imidazoline condensate	BAK.
2,5-Dimethoxyaniline, ethoxylated	MIL.
2-Heptadecyl-1,4-hydroxymethyl-4-ethyl-2-oxazoline	BRD.
N-Hexadecylmorpholine	BRD.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine	BRD, MIR.
*1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline	BRD, MIR, MOA, MZC, SCP, SHX.
*1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline	AAC, MOA, TCH, WTC.
1-(2-Hydroxyethyl)-2-nor (tallow alkyl)-2-imidazoline	MZC.
1-(2-Hydroxyethyl)-2-nor(soya oil alkyl)-2-imidazoline	MIR.
*1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline	BRD, HDG, MIR, MOA, WTC, X.
1-(2-Hydroxyethyl)-2-(tall oil alkyl)imidazoline, fatty acid salt	X.
Lignin amine	WVA.
1-(2-Naphthenic acid amidoethyl)-2-naphthenyl-2-imidazoline	ARC.
Rosin amine, ethoxylated	BAK, HPC, WTC.
m-Toluidine, ethoxylated	MIL.
Amine oxides and oxygen-containing amines (Except those having amine linkages), cyclic, all other	DA, TCH, WTC.
AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:	
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES:	
Acetic acid, amides with polyalkylene polyamines, salt	X.
Caprylic acid tetraethylene-pentamine condensate	ICI.
Carboxylic acid-diamine and polyamine condensates, all other	DA, ENJ, GAF, WTC, WVA.
Coconut acids, dimethylpropylamine condensate, carboxylated	AAC.
Coconut oil acids-N,N-dimethyltrimethylenediamine condensate	FTX, SCP.
Mixed fatty acids-polyalkylenepolyamine condensate	TCH.
Naphthenic acids-polyalkylene polyamine condensate	X.

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TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES--CONTINUED	
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES--CONTINUED	
Naphthenic acids-tall oil fatty acids-polyalkylene polymine condensate	X.
2-Nor tall oil alkyl-1-tall oil amidoethyl imidazoline	SHX.
Oleic acid-diethylenetriamine condensate	DA, LUR.
Oleic acid-N,N-dimethyltrimethylenediamine condensate	CCW.
Pelargonic acid-tetraethylenepentamine condensate	ICI, STC.
Stearic acid-diethylenetriamine condensate	DA, JOR, S(E).
Stearic acid-diethylenetriamine condensate, ethyl sulfate	GDC.
Stearic acid-ethylenediamine condensate	CLD, SOS.
Stearic acid-ethylenediamine condensate, monoethoxylated ethyl sulfate	GDC.
Stearic acid-ethylenediamine condensate, monoethoxylated ethyl sulfate	GDC.
Stearic acid mixed amine condensate	STC.
Stearic acid-tetraethylenepentamine condensate	ONX.
Stearic acid-tetraethylenepentamine condensate, acetate salts	X.
Tall oil acids-diethylenetriamine condensate	HST(E), SCP, STC, WVA.
Tall oil acids-N,N-dimethylpropylenediamine condensate	FER.
*Tall oil acids-polyalkylenepolyamine condensate	QCP, SHX, WVA, X.
Tall oil acids-polyalkylenepolyamine condensate, salts, with dodecylbenzene sulfonic acid and/or tall oil fatty acids	X.
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES, ALKOXYLATED:	
*Stearic acid-ethylenediamine condensate, monoethoxylated	DEX, GDC, ICI, SLC.
OTHER AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:	
Cocoamidopropyl dimethyl amine oxide	SBC.
N,N'-(Di-tall oil acid)amidoethylamine	BAK.
3-Lauramido-N,N-dimethylpropylamine oxide	JOR, ONX, SHW.
Stearamidoethyldiethylamine	S(E).
Stearamidoethylethanolamine acetate	S(E).
Stearic acid, diethanolamine condensate, methyl sulfate	DUP.
Tallow-amido-propyl dimethylamine oxide	ONX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF):	
AMINE SALTS:	
N-(2-((2-Aminoethyl)amino)ethyl)octadecanamide acetate or octadecanamide, N,N'-(imino-2,1-ethanediyl)bis, monoacetate	DA.
(Coconut oil alkyl)amine acetate	ARC.
N,N-Dimethyl-N-alkylamine phosphate	X.
(Hydrogenated tallow alkyl)amine acetate	ARC, WTC.
(Mixed alkyl)amine phosphate	X.
Octadecylamine acetate	ARC, STC.
(Tallow alkyl)amine acetate	ARC, X.
N-(Tallow alkyl)trimethylenediamine acetate	ARC.
N-(Tallow alkyl)trimethylenediamine oleate	ARC, JTO.
DIAMINES AND POLYAMINES:	
N-(Coconut oil alkyl)trimethylenediamine	JTO, SHX.
N-(Coconut oil alkyl)trimethylenediamine, adipic acid salt	X.
N-(Dimeracidalkyl)trimethyenediamine	ENO.
Dimethylaminopropylamine	AZS.
N-(Docosyl and eicosyl)trimethylenedismine	ENO.
N-Dodecyldiethylenetriamine	ARC.
N-(Ethylhexyl)trimethylenediamine	ARC.
IMIDAZOLINE DERIVATIVES:	
1-(2-Aminoethyl)-2-nor(tall oil alkyl)-2-imidazoline	SCP, WTC.
2-Heptadecyl-2-imidazoline	CGY, SCO.
Stearamidoethyl-2-heptadecyl imidazoline	ICI.
N-(Mixed alkyl)polyethylenepolyamine	CCW, WTC.
*N-(9-Octadecenyl)trimethylenediamine	ARC, JTO, SHX.
2-Propyl-3-tallow-1,3-tetrahydropyrimidine	ARC.
N-(Soybean oil alkyl)trimethylenediamine	ENO.
3-(Tall oil amino)propyl amine	SHX.
*N-(Tallow alkyl)dipropylenetriamine	ARC, ENJ, SHX.
N-(Tallow alkyl)trimethylenediamine	ARC, JTO.
N-(Tallow alkyl)-N,N',N'-trimethyl-1,3-propane diamine	ARC.
3-Tetradecylaminopropyl amine	SHX.
N,N',N'-Trimethyl-N-alkyl-1,3-propane diamine	ARC.
Diamines and polyamines, all other	X, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF)--CONTINUED	
PRIMARY MONOAMINES:	
Alkyl dimethyl amine oxide	STC.
Arachidylbehenylalkyl amine	ENO.
(Coconut oil alkyl)amine	ARC, JTO, MCB, SHX.
Dimeracidalkyl amine	ENO.
Dodecylamine	ARC, SHX.
Hexadecylamine	ARC, ENO.
*(Hydrogenated tallow alkyl)amine	ARC, ENJ, ENO, JTO, SHX.
(Mixed alkyl)amine	SHX.
*9-Octadecenylamine	ARC, ENO, JTO, SHX.
*Octadecylamine	ARC, ENO, SHX.
*(Soybean oil alkyl)amine	ARC, ENO, JTO.
(Tall oil alkyl)amine	ARC.
*(Tallow alkyl)amine	ARC, ENJ, ENO, JTO, SHX.
SECONDARY AND TERTIARY MONOAMINES:	
Bis(coconut oil alkyl)amine	ARC.
Bis(hydrogenated tallow alkyl)amine	ARC.
Bis(tallow alkyl)amine	ARC.
N,N-Dimethyl(behenyl alkyl)amine	ENO.
N,N-Dimethyl(coconut oil alkyl)amine	AAC, ARC, ENO.
N,N-Dimethyldodecylamine	ARC, TNA.
N,N-Dimethylhexadecylamine	ARC, ONX, SHX, TNA.
N,N-Dimethyl(hydrogenated tallow alkyl)amine	ARC.
N,N-Dimethyl(mixed alkyl)amine	BRD, ONX, TNA.
N,N-Dimethyl(9-octadecenyl-alkyl)amine	ENO.
N,N-Dimethyl-9-octadecenylamine	ARC.
*N,N-Dimethyloctadecylamine	ARC, ENO, SHX, TNA.
N,N-Dimethyl(soybean oil alkyl)amine	ARC, ENO,
N,N-Dimethyl(tallow alkyl)amine	ENO.
N,N-Dimethyltetradecylamine	ARC, BRD, TNA.
N-Methylbis(coconut oil alkyl)amine	ARC, SHX.
N-Methylbis(hydrogenated tallow alkyl)amine	ARC, ENO, SHX.
Methyl didecylamine	TNA.
N-Methyldioctadecylamine	ARC.
Triisodecylamine	SCP.
Trilaurylamine	SCP.
Tri(mixed alkyl)amine	SHX, TNA.
Trioctylamine	SCP, SHX.
Tri(tridecyl)amine	SHX.
Secondary and tertiary monoamines, all other	ARC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS:	
Alkyldimethylamine diethyl sulfate	DA.
(2-Aminoethyl)ethyl(hydrogenated tallow alkyl)(2-hydroxyethyl)ammonium ethyl sulfate	LUR.
Benzene-methanammonium-N-(3-aminopropyl)-N,N-dimethyl-N-cocoacyl derivatives-chlorides	BAK.
Benzene-methanammonium-N,N-dimethyl-N-tetradecyl-chloride	BAK.
Benzyl(coconut oil alkyl)bis(2-hydroxyethyl)-ammonium chloride	SCP, X.
Benzyl(coconut oil alkyl,ethoxylated)-dimethylammonium chloride	SCP.
1-Benzyl-1-(2-hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline	BAK, X.
Benzyl(rosin amine)ammonium chloride, ethoxylated	BAK.
Benzyl(tallow alkyl)bis(2-hydroxyethyl)ammonium chloride	DUP.
Bis(N-Amidopropyl, N,N-dimethyl, N-benzyl ammonium chloride)	SBC
Bis(N-amidopropyl)-N,N-dimethyl-N-ethylammonium ethyl sulfate, dimer acid	SBC.
Bis(N,N1-ethyl(stearic/arachidic/behenic)amide)-cyanoethyl ethylammonium ethosulfate	PCI.
Bis(2-hydroxyethyl)(coconut oil alkyl) ammonium chloride	ARC.
Bis(2-hydroxyethyl, ethoxylated)methyl(9-octadecenyl)-ammonium chloride	ARC.
Bis(2-hydroxyethyl, ethoxylated)-methyloctadecylammonium chloride	ARC.
Bis-2-hydroxyethyl-hydrogenated tallo-ethyl sulfate	ICI.
Bis[2-hydroxyethyl]methyl[tallow alkyl]ammonium chloride	ARC, MZC.
Bis(2-hydroxyethyl)methyl (tallow alkyl)methosulfate	ARC.
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-methylammonium chloride	ARC, KNJ, GAF, SHX.
Dimethyl dodecyl ethyl ammonium ether sulfate	PCI.
Ethanaminium, 2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-, salt with silicic acid	TCH.
Ethoxylated tallow amine, potassium propionate derivative	SVC.
N-Ethyl-N,N-bis(polyoxyethylene)tallow ammonium ethyl sulfate	SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
Ethyl dimethyl ricinoleamidoproylammonium ethyl sulfate	MOA.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate	ICI, SHX.
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate	BRD, ICI.
1-Ethyl-2-isoheptadecyl-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate	SBC.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate	ICI.
α-Glyconamidopropyl dimethyl-2-hydroxyethyl ammonium ammonium chloride	VND.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium ammonium dihydrogen phosphate	ACY.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium nitrate	ACY.
Hydroxyethyl-2-undecyl-2,3-imidazoline	MOA.
Hydroxypropylammonium acetate	[illegible]
N-2-Hydroxypropyl-N-methyl-N,N-bis(tallowamido ethyl) ammonium ethyl sulfate	SHX.
Isostearamidopropyl dimethylamino glycolate	SBC.
(3-Lauramidopropyl)trimethylammonium methyl sulfate	ACY.
2-(2-Lauroyloxyethyl)carbamoyl-1-methylpyridinium chloride	WTC.
Methyl dioleyl ethoxy ammonium methyl sulfate	SHX.
1-Methyl-2-(8-heptadecenyl)-1-(9-octadecenyl)amido ethyl	SHX.
1-Methyl-2-nor-tallow-1-2-tallow amidoethyl-imidazoliniummethyl sulfate	SHX.
N-Methyl-N-polyoxyethylene-N,N-bis(hydrogenated allow amidoethyl)ammonium	SHX.
N-Methyl-N-polyoxyethylene-N,N-bis(tallow amidoethyl)	SHX.
Methyl-2-(2-stearoyloxyethyl)carbamoylpyridinium chloride	WTC.
Methyltallowdiethylenetriamine condensate, polyethoxylated,methyl sulfate	SVC.
Methyltallowdiethylenetriamine condensate, polypropoxylated, methyl sulfate	SVC.
Mixed fatty acid amide with diethylene triamine/ ethyl sulfate	EFH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
Oxygen-containing quaternary ammonium salts (Except those having amide linkages), all other	ARC, BAK, ENJ, X, X.
Polyethyleneimine methyl ammonium sulfate	STC.
1-Propanaminium, N-ethyl-N,N-dimethyl-3-(1-oxooctadecyl)amino-, ethyl sulfate	SBC.
Stearylamidopropyl dimethyl myristyl acetate ammonium chloride	VND.
Stearyl dimethylammoniummethosulfate quaternary	SVC.
Tallow amine, ethoxylated, quarternary ammonium salt	DUP, VND.
Tetra butyl ammonium hydrogen sulfate	HXL.
Quaternary ammonium salts having amide linkages, all other	BAK, ENJ, SNW, VND.
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN:	
ACYCLIC:	
Bis(coconut oil alkyl)dimethylammonium chloride	ARC, ENJ, ONX, SHX, WTC.
Biscoconut oil alkyl dimethylammonium nitrate	ARC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride	ARC, ENO, ONX, SHX, SVC.
Bis(hydrogenated tallow alkyl)-dimethylammoniummethyl sulfate	ARC, ONX, SHX.
Bis(tallow alkyl)dimethyl ammonium chloride	SHX.
Bis(tallow alkyl)dimethylammonium chloride	ARC.
Cocodimethyl ethyl ammonium ethyl sulfate	SHX.
N-(Coconut oil alkyl)aminobutyric acid, sodium salt	ARC, BRD, ONX, SHX.
Dicocodimethyl ammonium methyl sulfate	SHX.
*Didecyldimethylammonium chloride	HNT, JTO, ONX.
Dilauryldimethylammonium chloride	HXL.
Dimethyldi(C12-18)ammonium chloride (mixed straight and branched chains)	SHX.
Dimethyldioctadecylammonium choride	ARC, SHX.
Dimethyldioctadecylammonium methyl sulfate	ARC, SHX.
Dimethylditallow ammonium chloride	SHX.
N,N-Dioctyl-N,N-dimethyl ammonium chloride	BRD, HNT.
Ditallowamidoammonium sulfate	CRD.
Dodecyltrimethylammonium chloride	ARC.
Ethyldimethyl(mixed alkyl)ammonium ethyl sulfate	DEX, JOR.
Ethylhexadecyldimethylammonium bromide	HXL.
Hexadecyltrimethylammonium bromide	HXL.
Hexadecyltrimethylammonium chloride	ARC, BRD, SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--CONTINUED:	
ACYCLIC--CONTINUED	
(Hydrogenated tallow alkyl)trimethylammonium chloride	ARC.
Methyl-1-tallowamidoethyl-2-tallowimidazolium-methyl sulfate	CRD.
Methyl tri(C_{9-10})ammonium chloride	SHX.
Methyltrioctylammonium chloride	BRD, SCP.
(Mixed alkyl)ammonium chloride	MIL.
Mixed linear alcohols, sulfated, ammonium salt	STC.
(Mixed linear alkyl)trimethyl ammonium bromide	ARC, DUP.
Mixture of N-octyl, N-decyl, N,N-dimethyl ammonium chloride and benzyl, dimethyl, (mixed alkyl) ammonium chloride	BRD.
N-Octyl, N-decyl, N,N-dimethyl ammonium chloride	BRD, HNT.
*N,N,N',N',N'-Pentamethyl-N-(tallow alkyl)-trimethylene-bisammonium chloride	ARC, JTO, SHX.
Stearic acid ethylene diamine methyl ammonium sulfate	STC.
Tetrabutylammonium bromide	EK, HXL, RSA.
Tetradecyl-4-ethyl pyridinium chloride	HXL.
Tetraethylammonium bromide	EK, RSA.
Tetraethylammonium chloride	EK.
Tetraheptylammonium bromide	EK.
Tetra methylammonium bromide	RSA.
Tetramethylammonium chloride	RSA.
Tetramethylammonium hydroxide	RSA.
Tetrapropylammonium bromide	EK.
Tetrapropylammonium hydroxide	RSA.
Tributylmethylammonium chloride	TNA.
Trihydrogenated tallowammonium chloride	ENO.
Trimethyldodecylammonium chloride	ONX.
Trimethyl(mixed alkyl)ammonium chloride	SVC.
Trimethyloctadecylammonium chloride	ARC.
*Trimethyl(soybean oil alkyl)ammonium chloride	ARC, JTO, SHX.
Trimethyl(tallow alkyl)ammonium chloride	ARC, ENO, JTO, SHX.
Trimethyltetradecylammonium bromide	HXL.
Quaternary ammonium salts, not containing oxygen, acyclic, all other	DA, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--CONTINUED:	
BENZENOID:	
*Benzyl(coconut oil alkyl)dimethylammonium chloride	CCL, CRT, ENO, GDC, HRT, ONX, SCP, TCC.
Benzyl-di(hydrogenated tallow alkyl)-methylammonium chloride	ARC.
*Benzyldimethyl(mixed alkyl)ammonium chloride	AAC, BRD, CRD, FTX, HNT, JOR, ONX, PCI, RH, SCP, SDH, SHX, X.
Benzyldimethyloctadecylammonium chloride	HXL, JOR, ONX, SCP, SHX, TNI.
Benzyldimethyl(tallow alkyl)ammonium chloride	ENO, HLI.
Benzyldimethyltetradecylammonium chloride	BRD, HXL.
Benzyldodecyldimethylammonium chloride	HXL, ONX.
Benzylhexadecyldimethylammonium chloride	BKM, ONX.
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride	ARC, ENO.
Benzyl-methyl-bis(hydrogenated tallow)ammonium chloride	ENO.
1-Benzylpyridinium chloride	BRD, PCI.
Benzyltriethylammonium chloride	RSA.
*Benzyltrimethylammonium chloride	CRT, HIP, PCI, RSA, SHX, TCC.
Benzyl-tris(2-hydroxyethyl)ammonium chloride	TCC.
2,4-Dichlorobenzyldimethyl(mixed alkyl)ammonium chloride	X.
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	ONX.
2-Dodecylisoquinolinium bromide	ONX.
(Dodecylmethylbenzyl)trimethylammonium chloride	RH.
1-Dodecylpyridinium chloride	CCL, DAN.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride	HNT.
Methyl-bis(coconut oil alkyl)benzyl ammonium chloride	ARC.
(Mixed alkyl)dibenzyltrimethyl-1,3-propane diammonium chloride	GDC.
α-Naphthyl-dodecyl-dimethyl ammonium chloride	ONX.
1-Phenethyl-2-picolinium bromide	HXL.
Phenethyl pyridinium bromide	HXL.
Quaternary ammonium salts not containing oxygen, cyclic, all other	BAK, ICI, X.
OTHER CATIONIC SURFACE-ACTIVE AGENTS:	
Cationic surface-active agents, all other	DUP, MIR, RPC, SCP, WTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC	
CARBOXYLIC ACID AMIDES:	
DIETHANOLAMINE CONDENSATES (AMINE/ACID RATIO = 2/1):	
Capric acid (Ratio = 2/1)	SCP, TCH.
Castor oil acids (Ratio = 2/1)	CLI, WSC.
*Coconut oil acids (Ratio = 2/1)	ARD, ARL, CCC, CCL, CLI, CON, CTL, CYL, DA, ECC, EFH, FTX, GDC, HLI, HNT, HRT, HTN, JOR, LUR, MCP, MOA, MRV, MZC, ONX, PNX, RPC, SBC, SCP, SHX, SOP, STP, TCH, VAL, WTC.
*Coconut oil and tallow acids (Ratio = 2/1)	BRD, CRT, CTL, ESS, MOA, SBC, UNN, WTC.
Lard oil acids	FER.
Lard oil and tall oil acids	FER.
Lauric acid (Ratio = 2/1)	CLI, CRD, MOA, MZC.
*Lauric and myristic acids (Ratio = 2/1)	CRD, MOA, MZC, PG, SBC, STP.
Linoleic acid (Ratio = 2/1)	KMP, MOA.
Mixed carboxylic acids	HLI.
*Oleic acid (Ratio = 2/1)	CLI, EMR, MZC, SBC, STP.
Palmitic and stearic acids (Ratio = 2/1)	RPC.
Pelargonic acid (Ratio = 2/1)	TCH.
Soybean oil acids (Ratio=2/1)	MZC.
*Stearic acid (Ratio = 2/1)	CLI, EFH, VAL.
*Tall oil acids (Ratio = 2/1)	ECC, MOA, MZC, SBC, STC, WTC, WVA.
*Tallow acids (Ratio = 2/1)	CLI, EFH, ICI, JOR, MOA.
Diethanolamine condensates (Amine/acid = 2/1), all other	SOS.
DIETHANOLAMINE CONDENSATES (OTHER AMINE/ACID RATIOS):	
Capric acid (Ratio = 1/1)	MOA.
*Coconut oil acids (Ratio = 1/1)	AAC, ARD, BRD, CLI, CTL, DA, FTX, HLI, HNT, HRT, HTN, JOR, JRG, MOA, MZC, ONX, PEL, PIL, SBC, SCP, SHX, STP, SVC, TCC, WTC, X.
*Lauric acid (Ratio = 1/1)	CLI, CYL, MOA, ONX, SBC, TCH, TNI.
*Lauric and myristic acid (Ratio = 1/1)	BRD, CLI, CPC, CYL, HTN, MOA, SBC, WTC.
*Linoleic acid (Ratio = 1/1)	CLI, MOA, SBC, VND.
Myristic acid (Ratio = 1/1)	MOA.
Oleic acid (Ratio = 1/1)	DA, HLI.
Palmitic and stearic acids (Ratio = 1/1)	MOA, TMH.
*Soybean oil acids (Ratio = 1/1)	MOA, MZC, SBC.
*Stearic acid (Ratio = 1/1)	BRD, CHP, ECC, HIP, MRV.
Tall oil acids	CHP, WTC.
Tallow acids	MOA, VPC.
ALL OTHER CARBOXYLIC ACID AMIDES:	
Alkanolamine condensates, all other	CPC, DA, TCH, VND, WTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED:	
ALL OTHER CARBOXYLIC ACID AMIDES--CONTINUED:	
Carboxylic acid - alkanolamine condensates, all other	DA, ROB, WTC.
Castor oil acids-polyalkylene polyamine maleic anhydride condensate	X.
Cocoaminoamide	DA.
Coconut oil acids	STP.
*Coconut oil acids (Ratio = 1/1)	JOR, MOA, ONX, PG, SCP, SOS, VND, WTC.
*Coconut oil acids (Ratio = 2/1)	HLI, STC, STP.
Coconut oil acids	DA.
Coconut oil acids-dimethylaminopropylamine condensate (Ratio = 1/1)	JRG.
Coconut oil acids-ethanolamine condensate, ethoxylated	STP.
Diethanolamine condensate, all other	DA.
Dioleic acid (Ratio = 1/2)	MZC.
Ethanolamine condensates, (Ratio = 1/1), all other	VND.
Fatty acid alkenolamide	MCB.
Hydrogenated (tallow acids) aminoethylethanolamine condensate (Ratio=1/2)	DAN.
Hydrogenated tallow acids, (Ratio = 2/1)	ARC.
Hydrogenated tallow acids, aminoethylethanolamide, acetate salt	PCI.
Isopropanolamine condensates, all other	WTC.
Isostearic acid, aminoethylethanolamide, acetate salt	PCI.
Lauric acid	CLI, HTN, MOA.
Lauric acid - ethanolamine condensate, ethoxylated	MZC.
Lauric and myristic acids (Ratio = 1/1)	MOA.
Mixed mono-and diethandlamines	SCP.
Myristic acid	CRN.
Oleic acid (Ratio = 1/1)	SBC.
Oleic acid (Ratio = 1/2)	EFH.
Oleic acid aminoethylethanolamine-condensate (Ratio = 1/1) ethyl sulfate	RPC.
*Oleic acid-ethanolamine condensate, ethoxylated	ARC, ONX, SHX.
Stearic acid (Ratio = 1/1)	MOA, VND, WTC.
Stearic acid (Ratio = 1/2)	HAL, WTC.
Stearic acid (Ratio = 2/1)	CLI, ECC.
Stearic acid aminoethanolamine (Ratio = 1.0/1.65)	CHP.

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TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED:	
ALL OTHER CARBOXYLIC ACID AMIDES--CONTINUED:	
Stearic acid-aminoethyl ethanolamine (Ratio = 1.75/1.0)	SBC.
Stearic acid-N-aminoethyl ethanolamine condensate	MRV.
Stearic acid diethanolamine (Ratio = 1.0/11.6)	CHP.
Stearic acid-ethylenediamine condensate (Ratio = 1/2)	TCH, WTC.
Tall oil acids-ethylenediamine condensate (Ratio = 1/2)	SCP.
Tall oil fatty acids (Ratio = 1/2)	EFH.
Tall oil fatty acids (Ratio = 2.7/1)	EFH.
Tall oil fatty acids-triethanolamine condensate	X.
Tallow alkyl amide, ethoxylated	MCB.
Carboxylic acid amides, all other	BAK, BKM, WTC.
CARBOXYLIC ACID ESTERS:	
ANHYDROSORBITOL ESTERS:	
Anhydrosorbitol dioleate	HDG, ICI.
Anhydrosorbitol monoester of tall oil acids	MZC, WTC.
*Anhydrosorbitol monolaurate	BRD, GLY, ICI, MZC, TCH.
*Anhydrosorbitol mono-oleate	BAS, BRD, GLY, HDG, ICI, MZC, SVC, TCH.
Anhydrosorbitol monopalmitate	GLY, ICI, TCH.
*Anhydrosorbitol monostearate	BRD, GLY, HDG, ICI, MZC, TCH.
Anhydrosorbitol sesquiester of tall oil acids	TCH.
Anhydrosorbitol sesquioleate	GLY, TCH.
Anhydrosorbitol sesquistearate	TCH.
Anhydrosorbitol tetrastearate	GLY.
Anhydrosorbitol triester of tall oil acids	GLY.
*Anhydrosorbitol trioleate	BRD, ICI, MZC, TCH.
Anhydrosorbitol tristearate	GLY.
DIETHYLENE GLYCOL ESTERS:	
Diethylene glycol distearate	GLY, WTC.
Diethylene glycol monoester of coconut oil acids	DA.
Diethylene glycol monoester of tall oil acids	BKM.
*Diethylene glycol monolaurate	ECC, GLY, HDG, MZC.
*Diethylene glycol monostearate	CLI, ECC, HDG, STP, VND, WTC.
Diethylene glycol sesquiester of tall oil acids	ECC.
Diethylene glycol sesquilaurate	GLY.
Diethylene glycol sesquistearate	WTC.
Diethylene glycol esters, all other	DA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
ETHOXYLATED ANHYDROSORBITOL ESTERS:	
*Ethoxylated anhydrosorbitol monolaurate	BAS, BRD, GLY, ICI, MZC, TCH.
*Ethoxylated anhydrosorbitol mono-oleate	BAS, BRD, EMR, CLY, HDG, ICI, MZC, SVC, TCH.
Ethoxylated anhydrosorbitol monopalmitate	HDG, ICI, MZC.
*Ethoxylated anhydrosorbitol monostearate	GLY, HDG, ICI, MZC, TCH.
Ethoxylated anhydrosorbitol monotallate	BRD.
Ethoxylated anhydrosorbitol triester of tall oil acids	HDG, ICI, WVA.
*Ethoxylated anhydrosorbitol trioleate	GLY, HDG, ICI, TCH.
*Ethoxylated anhydrosorbitol tristearate	GLY, ICI, MZC.
Glycerol dimerate	PCI.
ETHOXYLATED SORBITOL ESTERS:	
Ethoxylated sorbitol beeswax ester	ICI.
Ethoxylated sorbitol hexaester of tall oil acids	TCH.
Ethoxylated sorbitol hexaoleate	GLY, ICI, MZC, TCH.
Ethoxylated sorbitol lanolin ester	ICI.
Ethoxylated sorbitol mono-oleate	ICI.
Ethoxylated sorbitol oleate, acetylated	ICI.
Ethoxylated sorbitol pentalaurate	MZC.
Ethoxylated sorbitol tetraester of lauric and oleic acids	ICI.
Ethoxylated sorbitol tetraester of tall oil acids	WTC.
Ethoxylated sorbitol tetraoleate	ICI.
Ethoxylated sorbitol tetrastearate	ICI.
Ethoxylated sorbitol esters, all other	BAK, BAS, SVC.
ETHYLENE GLYCOL ESTERS:	
Ethylene glycol distearate	EMR, ICI, MZC, STP, TCH, WM, WTC.
Ethylene glycol mono-oleate	CGY.
Ethylene glycol monostearate	CLI, CYL, GLY, HDG, KMP, MZC, STP, TCH, VND, WM.
Ethylene glycol esters, all other	WTC.
GLYCEROL ESTERS:	
COMPLEX GLYCEROL ESTERS:	
Glycerol diacetyltartrate monostearate	EKT.
lycerol ester ethoxylates	GLY.
Glycerol mono- and diesters of mixed fatty acids	ICI.
Glycerol monoester of mixed fatty acids, acetylated	EKT.
Glycerol monoester of mixed fatty acids, succinylated	EKT.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
GLYCEROL ESTERS--CONTINUED:	
COMPLEX GLYCEROL ESTERS--CONTINUED:	
Glycerol mono-oleate, acetylated	WTC.
Glycerol mono-oleate, ethoxylated	SCP.
Glycerol monoester of hydrogenated tallow fatty acids	PCI.
GLYCEROL ESTERS OF CHEMICALLY DEFINED ACIDS:	
Glycerol dilaurate	VND.
Glycerol dimerate	PCI.
Glycerol dioleate	STP.
Glycerol distearate	PCI.
Glycerol monocaprylate	GLY, STP.
Glycerol monolaurate	GLY.
*Glycerol mono-oleate	EFH, EMR, GLY, HAL, HDG, MZC, STP, TCH.
*Glycerol monoricinoleate	CAS, GLY, HDG, MZC.
*Glycerol monostearate	CCC, CHL, CLD, CPC, CYL, DA, EMR, GLY, HAL, HDG, LUR, MCB, MZC, SOS, STP, TCH, VND, WM, WTC, X.
Glycerol trioleate	SVC.
GLYCEROL ESTERS OF MIXED ACIDS:	
Glycerol diester of lard acids	GLY.
Glycerol mixed ester of soybean oil-trimethylolpropane	EMP.
Glycerol mono-, di-, and triesters of hydrogenated tallow acids	WPG.
Glycerol monoester of C_8-C_{10} acids	SVC.
Glycerol monoester of coconut oil acids and trioleic acid, mixed	SVC.
Glycerol monoester of cottonseed oil acids	EKT.
Glycerol monoester of hydrogenated cottonseed oil oil acids	EKT, WM.
Glycerol monoester of hydrogenated lard acids	EKT.
Glycerol monoester of hydrogenated soybean oil acids	BFP, EKT, WTC.
Glycerol monoester of hyrogenated tallow acids	TCH.
Glycerol monoester of lard acids	EKT.
Glycerol monoester of mixed fatty acids	PCI, SVC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
GLYCEROL ESTERS--CONTINUED:	
GLYCEROL ESTERS OF MIXED ACIDS--CONTINUED:	
Glycerol monoester of palm oil acids	EKT.
Glycerol monoester of safflower oil acids	EKT.
Glycerol monoester of tall oil acids	FER.
Glycerol monoester of tallow acids	EKT, SOS.
Glycerol sesquiester of hydrogenated tallow acids	WTC.
Glycerol sesquiester of tall oil acids	SLM(E).
Glycerol triester of coconut oil acids, and triglycerides	SVC.
Glycerol triester of mixed fatty acids	SVC.
Glycerol esters of mixed acids, all other	BFP, DA.
NATURAL FATS AND OILS, ETHOXYLATED:	
Carnuba wax, ethoxylated	SHX.
*Castor oil, ethoxylated	BAS, CAS, DA, GAF, GLY, HTN, ICI, MCB, MIL, S(E), STC, TCH, TMH, WVA, X.
Coconut oil, ethoxylated	SVC.
*Hydrogenated castor oil, ethoxylated	CAS, DA, ICI, MCB, MIL, S(E), STC, TCH.
*Lanolin, ethoxylated	CRD, CRN, STC, TCH.
Mixed tall oil and rosin acids, ethoxylated	STC.
Oleic acid, ethoxylated and propoxylated	MIL.
Soybean oil, ethoxylated	DA.
Stearic acid, ethoxylated	GAF.
Stearic acid propoxylated	ARC.
Tall oil acids, ethoxylated	STC.
Tall oil acids, ethoxylated and propoxylated	X.
Tall oil, refined, ethoxylated	TCH, X.
Tallow fatty acids, ethoxylated	MCB.
POLYETHYLENE GLYCOL ESTERS:	
POLYETHYLENE GLYCOL ESTERS OF CHEMICALLY-DEFINED ACIDS:	
Mixture of polyethylene glycol monooleate and ethoxylated glycerine	SVC.
*Polyethylene glycol dilaurate	GLY, HAL, HDG, MZC, STP, TCH, WM.
*Polyethylene glycol dioleate	CLD, DA, EFH, GLY, HAL, MIL, STP, TCH.
Polyethylene glycol distearate	CHP, GLY, MZC, STP, TCH.
Polyethylene glycol hydroxyacetate	CCA.
Polyethylene glycol monocaprylate	ECC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
POLYETHYLENE GLYCOL ESTERS--CONTINUED:	
POLYETHYLENE GLYCOL ESTERS OF CHEMICALLY-DEFINED ACIDS--CONTINUED:	
*Polyethylene glycol monolaurate	BAS, CCA, CGY, ECC, GLY, HAL, ICI, MZC, STP, TCH, WH.
*Polyethylene glycol mono-oleate	ARC, BAS, CCA, CLD, CRT, DA, ECC, EFH, GAF, GDC, GLY, HAL, HDG, MRT, MRV, MZC, SHX, STP, SVC, TCH, WTC.
Polyethylene glycol mono-oleate, ethoxylated	ICI.
Polyethylene glycol monopalmitate	GLY, ICI.
Polyethylene glycol monopelargonate	STC, TCH.
*Polyethylene glycol monostearate	ARC, BAS, CCC, CPC, CRT, DA, DEX, EFH, GAF, GDC, GLY, HDG, HRT, ICI, MZC, SLC, SOS, STP, SVC, TCH, VND, WTC.
Polyethylene glycol sesquinoleate	TCH, WTC.
Polyethylene glycol terephthalate	PCI.
Polyethylene glycol esters of chemically-defined acids, all other	BAS, WTC.
POLYETHYLENE GLYCOL ESTERS OF MIXED ACIDS:	
Polyethylene glycol diester of coconut oil and oleic acids	EFH.
Polyethylene glycol diester of mixed liner acid/ oleic acid	PCI.
*Polyethylene glycol diester of tall oil acids	BRD, CCC, EFH, MZC, WVA, X.
Polyethylene glycol monoester of coconut oil acids	ICI.
Polyethylene glycol monoester of soybean oil acids	GLY.
*Polyethylene glycol monoester of tall oil acids	BKH, CCC, EFH, FER, MZC.
Polyethylene glycol (mixed ester) of tall oil acids	DA.
Polyethylene glycol sesquiester of castor oil acids	DA.
*Polyethylene glycol sesquiester of coconut oil acids	DA, LUR, MRT.
*Polyethylene glycol sesquiester of tall oil acids	ICI, MET(E), SLM(E), WTC, WVA.
Polyethylene glycol sesquiester of tallow acids	RPC, SHX, TCH, WTC.
Polyethylene glycol esters of mixed acids, all other	ARC, EFH, SOS, WVA.
POLYGLYCEROL ESTERS:	
Decaglycerol oleate	GLY.
Decaglycerol tetraoleate	SVC.
Hexaglycerol distearate	SVC.
Mixed oleic, lauric, stearic, and palmitic hexaglycerol esters	SVC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
POLYGLYCEROL ESTERS--CONTINUED:	
Polyglycerol decaoleate	GLY, TCH.
Polyglycerol distearate	GLY.
*Polyglycerol mono-oleate	HDG, MZC, WTC.
Polyglycerol monostearate	HDG, MZC.
Triglycerol distearate	EMR.
Polyglycerol esters, all other	WTC.
PROPANEDIOL ESTERS:	
1,2-Propanediol monolaurate	SBC.
1,2-Propanediol mono-oleate	EFH.
*1,2-Propanediol monostearate	EKT, GLY, MZC, SBC, TCH, WM, WTC.
Propanediol esters, all other	DA.
OTHER CARBOXYLIC ACID ESTERS:	
Caprylic amphopropinate	MOA.
Di-isobutylene maleate	RH.
Ethoxylated 1,3-butylene glycol condensed with oil fatty acid	STC.
Ethoxylated castor oil, ditridecylmaleate	UPF.
Ethoxylated glycerol mono- and diesters of hydrogenated tallow acids	SVC.
Ethoxylated glycerol and propylene glycol esters of coco fatty acids	SVC.
Ethoxylated 1,2-propanediol monostearate	ICI.
Ethoxylated and propoxylated glycerol mono- and diesters of tallow acids	SVC.
Lauric acid ester of glycerol and ethoxylated nonylphenol	TCC.
Linoleic acid dimers, alkoxylated	X.
Methylglucoside dioleate	CRN.
Methylglucoside laurate	HDG.
Methylglucoside sesquistearate	CRN.
Mixed di- and triethylene glycol monoester of tall tall oil acids	MCB, WVA.
Pentaerythritol stearate	ARC, SCP, VAL.
Pentaerythritol, tall oil acid ester, alkoxylated	X.
Polycarboxylic acid, alkylate	X.
Polycarboxylic acid, alkylphenoxyalkoxylate	X.
Polypropylene glycol diester of tall oil acids	MET(E).
Polypropylene glycol dioleate	CLD.
Polypropylene glycol mono-oleate	CLD.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
OTHER CARBOXYLIC ACID ESTERS--CONTINUED:	
Propylene glycol esters of hydrogenated palm oil	PG, VND.
Propylene glycol esters of hydrogenated soybean oil	PG.
Tripentaerythritol esters of tall oil acids	X
Carboxylic acid esters, all other	BAK, CHP, CRN, DA, EMR, ROB, SYL.
ETHERS:	
BENZENOID ETHERS:	
Alkylphenol-formaldehyde condensates, alkoxylated, all other	WTC, X.
t-Amylphenol, ethoxylated	X.
*Dinonylphenol, ethoxylated	BAS, CPC, DA, GAF, HTN, MZC, RH, S(E), TCH.
*Dodecylphenol, ethoxylated	BAS, DA, GAF, MCB, MON, SOC, TMH.
Epichlorohydrin bisphenol A, ethoxylated	X.
Furfuryl alcohol, ethoxylated	SVC.
Iso-octylphenol, ethoxylated	AAC, GAF, MCB, MZC, RH, STC, TMH.
(Mixed alkyl)phenol, alkoxylated	X.
(Mixed alkyl)phenol epichlorohydrin-formaldehyde, alkoxylated	X.
(Mixed alkyl)phenol, ethoxylated	DA, MCB, MIL, ETL.
(Mixed alkyl)phenol, ethoxylated, butyl ether	RH.
(Mixed alkyl phenol formaldehyde, methoxylated	STC.
*(Mixed alkyl)phenol-formaldehyde, alkoxylated	DA, STC, WTC, X.
(Mixed alkyl)phenoxypoly(ethyleneoxy)ethyl chloride	GAF.
Mixed phenylstyrene, phenol, ethoxylated	STC.
β-Naphthol, ethoxylated	X.
*Nonylphenol, ethoxylated	ARC, BAK, BAS, CPC, DA, GAF, HDG, HTN, ICI, MCB, MET(E), MIL, MOA, MON, MZC, OMC, RH, S(E), SHX, SOS, STC, STP, TCH, TMH, TX, UCC, WTC, WVA, X, X.
*Nonylphenol, ethoxylated and propoxylated	GAF, RH, S(E), X.
Nonylphenol-formaldehyde, alkoxylated	WTC, X.
*n-Octylphenol, ethoxylated	AAC, BAS, DA, TCH.
n-Octylphenol ethoxylated propoxylated	RH.
tert-Octylphenol-formaldehyde, ethoxylated	SDW.
*Phenol, ethoxylated	BAS, GAF, ICI, MIL, STC, TCH.
p-Phenylphenol, alkoxylated	MCB.
Phenylstyrene, ethoxylated	STC.
Soya sterols, ethoxylated	SCP.
Phenols, ethoxylated, all other	BAS, SVC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
ETHERS--CONTINUED:	
NONBENZENOID ETHERS:	
CHEMICALLY-DEFINED LINEAR ALCOHOLS, ALKOXYLATED:	
Butanol, ethoxylated	DA, GAF, MCB.
*Decyl alcohol, ethoxylated	AAC, BAS, CPC, GAF, ICI, MCB, S(E), STC, TCH.
Decyloxypoly(ethyleneoxy)ethyl chloride	GAF.
*Dodecyl alcohol, ethoxylated	AAC, HDG, ICI, MIL, WTC, X.
Eicosyl alcohol, ethoxylated	SHX.
Hexadecyl alcohol, ethoxylated	ICI, MZC.
N-Hexyl alcohol, ethoxylated	GAF.
Isoamyl alcohol, ethoxylated	GAF.
*9-Octadecenyl alcohol, ethoxylated	AAC, DA, GAF, ICI.
*Octadecyl alcohol, ethoxylated	CRN, DA, GAF, ICI, STC.
*Oleyl alcohol, ethoxylated	CPC, CRD, GLY, HTN, MZC, S(E), SHX, STC.
Stearyl alcohol, propoxylated and ethoxylated	TCH.
Chemically defined linear alcohols, alkoxylated, all other	BAS, WTC.
Coconut oil alcohol, ethoxylated	GAF, GLY, MZC, STC, TX.
Decyl and octyl alcohols, ethoxylated	GAF, TX.
Developmental alcohol, ethoxylated	SHC.
Glycerol, ethoxylated	SVC.
Lanolin alcohol, propoxylated	CRN.
Mixed linear alcohols, alkoxylated	X.
*Mixed linear alcohols, ethoxylated	AAC, BAS, DA, DUP, GAF, ICI, MCB, MET(E), MIL, RH, S(E), SHC, SHX, STC, TCH, TX, UCC, VST, WTC, X.
Mixed linear alcohols, ethoxylated, benzyl ether	X.
*Mixed linear alcohols, ethoxylated and propoxylated	BAS, DA, DUP, GAF, MCB, MIL, OMC, S(E), STP, SVP, TCH, UCC, WTC, WVA, X, X.
Mixed linear alkylpoly(ethyleneoxy)ethyl chloride	GAF.
Tallow alcohol, ethoxylated	AAC, STC, TX.
Mixed linear alcohols, alkoxylated, all other	CRD.
OTHER ETHERS AND THIOETHERS:	
Bis(alkyl-aryl)alcohols, ethoxylated	DA.
Bis-cumylphenyl-oxoethylene titanate	KPI.
Butanediol, ethoxylated	GAF.
Butyl carbitol, ethoxylated and propoxylated	WVA.
1,3-Butylene glycol, ethoxylated	STC.
Butynediol, ethoxylated	GAF.
tert-Dodecyl mercaptan, ethoxylated	AAC, GAF, MET(E).

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
ETHERS--CONTINUED:	
OTHER ETHERS AND THIOETHERS--CONTINUED:	
Glycerin, alkoxylated maleate	X.
Isodecyl alcohol, ethoxylated	MET(E).
Isodecyl alcohol, ethoxylated and propoxylated	MCB.
Lignin, ethoxylated	WVA.
Mixed alcohols, ethoxylated	CRN, MCB, MIL, RH, X.
Polyethylene, ethoxylated	RH.
Polyethylene glycol, propoxylated	MIL.
*Poly(mixed ethylene, propylene)glycol	S(E), UCC, X, X.
Polypropylene glycol, ethoxylated	BAS, DA, MCB, MZC, WTC, X.
Propoxylated corn starch	VAL.
Rosin alcohol, ethoxylated	MZC.
Sorbitol, ethoxylated	TCH.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol, ethoxylated	TCH.
Thiodigycol, ethoxylated	MCB.
*Tridecyl alcohol, ethoxylated	AAC, CPC, DA, DUP, GAF, HTN, ICI, MCB, MIL, MZC, OMC, S(E), STC, TCH, WTC, X.
Tridecyl alcohol, propoxylated and ethoxylated	DA, MCB, TX.
Trimethylheptanol, ethoxylated	TCH.
Trimethylnonyl alcohol, ethoxylated	TCH, UCC.
Trimethylolpropane, alkoxylated	BAS, MCB.
Ethers and thioethers, all other	AAC, RH, WTC, X.
OTHER NONIONIC SURFACE-ACTIVE AGENTS:	
Cumyl phenolate isopropoxy titanium salt	KPI.
(Mixed alkyl)phenol alkylenediaminealkanolamine formaldehyde	X.
Mixed fatty acid-ethoxylated nonyl phenol ester	RPC.
Octyl phosphate, ethoxylated	DUP.
Tetra-(2,2-diallyloxymethylene)-1-butoxy titanium bis-(ditridecyl) phosphite	KPI, WTC.
Tetra-isopropoxy titanium (bis dioctyl) phosphite	KPI.
Tetra-octyloxy titanium (bistridecyl) phosphite	KPI.
Tri(castor oil alkyl)phosphate	GLY.
Nonionic surface-active agents, all other	CRN, DUP, MIL, PG, TCH, X, X.

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of surface-active agents to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ACC	Alcolac, Inc.
ACT	Southland Corp., Chemical Div.
ACY	American Cyanamid Co.
AGP	Armour-Dial, Inc.
APX	Apex Chemical Co., Inc.
ARC	Akzo Chemie America, Armak Chemicals
ARD	Ardmore Chemical Co.
ARI	Atlas Refining, Inc.
ARL	Arol Chemical Products Co.
ARZ	Arizona Chemical Co.
AZS	AZS Corp., AZS Chemical Corp.
BAK	Baker International - Magna Corp.
BAS	BASF Wyandotte Corp.
BFP	Breddo Food Products Corp.
BKM	Buckman Laboratories, Inc.
BLA	Astor Products, Inc., Blue Arrow Div.
BRD	Lonza, Inc.
BSW	Original Bradford Soap Works, Inc.
CAS	Caschem, Inc
CCA	Interstab Chemicals, Inc.
CCC	C.M.C. Chemical Corp.
CCH	Interstab Chemicals, Inc.
CCL	Catawba-Charlab, Inc.
CCW	Morton-Thiokol, Inc., Carstab Corp.
CGY	Ciba-Geigy Corp.
CHL	Chemol, Inc.
CHP	C. H. Patrick & Co., Inc.
CIW	Stockhausen, Inc.
CLD	Colloids, Inc.
CLI	Clintwood Chemical Co.
CLU	Core-Lube, Inc.
CMT	Chemithon Corp.
CON	Concord Chemical Co., Inc.
CP	Colgate-Palmolive Co.
CPC	Grant Chemical Co.
CRD	Croda, Inc.
CRN	CPC Intrernational, Inc., Amerchol Corp.
CRT	Chemos Corp.
CTL	Continental Chemical Co.
CYL	Cyclo Chemical Corp.
DA	Diamond Shamrock Corp., Chemicals Co.
DAN	Dan River, Inc., Chemical Products Div.
DEX	Dexter Chemical Corp.
DOW	Dow Chemical Corp.
DUP	E. I. duPont de Nemours & Co., Inc.
DYS	Davies-Young Co.
ECC	Eastern Color & Chemical Co.
EFH	E. F. Houghton & Co.
EK	Eastman Kodak Co.:
EKT	Tennessee Eastman Co. Div.
EMK	Emkay Chemical Co.
EMR	Emery Chemicals Div. of National Distillers & Chemical Corp.
ENJ	Exxon Chemical Americas
ENO	Enenco, Inc.
ENP	Insilco Corp. Enterprise Companies Div.
ESS	Essential Chemicals Corp.
FER	Ferro Corp., Keil Chemical Div.
FPC	Flambeau Paper Corp.
FTX	Finetex, Inc.
GAF	GAF Corp., Chemical Group
GDC	Gresto, Inc.
GLY	Glyco, Inc.
GRL	Vestal Laboratories, Inc.
HAL	C. P. Hall Co.
HEW	Hewitt Soap Co., Inc.
HDG	Hodag Chemical Corp.
HIP	High Point Chemical Corp.
HLI	Onyx Chemical Co.
HMP	W. R. Grace & Co., Hampshire Chemicals Div.
HNT	Huntington Laboratories, Inc.
HRT	Hart Products Corp.
HST	American Heochst Corp., Sou-Tex Works
HTN	Heterene Chemical Co.
HXL	Hexcel Corp., Hexcel Chemical Products
ICI	ICI Americas, Inc., Chemicals Div.
JLP	J. L. Prescott Co.
JOR	Jordan Chemical Co.
JRG	Andrew Jergens Co.
JTO	Jetco Chemicals, Inc.
KNP	Knapp Products, Inc.
KPI	Kenrich Petrochemicals, Inc.
LAS	Los Angeles Soap Co.
LEA	Leatex Chemical Co.
LEV	Lever Brothers Co.
LKY	Lake States Div. of Rhinelander Paper Co.
LUR	Laurel Products Corp.
MAR	Reed Lignin, Inc.
MCB	Borg-Warner Corp., Borg-Warner Chemicals
MCP	Moretex Chemical Products, Inc.
MET	M & T Chemicals, Inc.
MIL	Milliken & Co., Milliken Chemical Div.
MIR	Miranol Chemical Co., Inc.
MOA	Mona Industrial, Inc.
MON	Monsanto Co.
MRD	Marden-Wild Corp.
MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
MRV	Marlowe-Van Loan Corp.
MZC	Mazer Chemicals, Inc.
NCC	Niacet Corp.
NES	Ruetgers-Nease Chemical Co.
NMC	National Milling & Chemical Co.
NOC	Norac Co., Inc., Mathe Div.
NPR	Safeway Stores, Inc.
NSC	National Starch & Chemical Corp.
NTL	NL Industries, Inc.
OMC	Olin Corp.
ONX	Onyx Chemical Co.
PCI	Piedmont Chemical Industries, Inc.
PEL	Pelron Corp.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.
PIL	Pilot Chemical Co.
PLX	Plex Chemical Corp.
PNX	Murphy-Phoenix Co.
PRX	Purex Corp.
PSP	Georgia-Pacific Corp., Bellingham Div.
QCP	Quaker Chemical Corp.
RAY	ITT Rayonier, Inc.

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1984--CONTINUED

CODE	NAME OF COMPANY
RH	Rohm & Haas Co.
ROB	Robeco Chemicals, Inc.
RPC	Millmaster Onyx Group. Lyndall Chemical Co. Div.
RSA	R.S.A. Corp.
S	Sandoz, Inc., Colors & Chemicals Div.
SBC	Scher Chemicals, Inc.
SBP	Sugar Beet Products Co.
SCM	SCM Corp., Organic Chemicals Div.
SCO	Scholler, Inc.
SCP	Henkel Corp.
SDC	Sandoz Chemicals Corp.
SDH	Sterling Drug, Inc.: Hilton Davis Chemical Co.
SDW	Sterling Organics Div.
SEA	Seaboard Chemicals, Inc.
SFS	Stauffer Chemical Co., Specialty & Intermediates Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SHX	Sherex Chemical Co., Inc.
SLC	Soluol Chemical Co., Inc.
SLM	Salem Oil & Grease Co.
SNW	Sun Chemical Corp., Chemicals Div.
SOC	Chevron Corp., Chevron Chemical Co.
SOP	Southern Chemical Products Co.
SOS	SSC Industries, Inc.
SPA	Scott Paper Co.
STC	American Hoechst Corp., Sou-Tex Works
STP	Stepan Chemical Corp.
SVC	Capital City Product Co., Armstrong Chemical Plant
SYL	Sylvahcem Corp.
SYP	Plastic Specialties & Technology, Inc., Synthetic Product Co. Div.
TCC	Sybron Chemical, Inc.
TCH	Emery Industries, Inc., Trylon Div.
TCI	Morton-Thiokol, Inc., Texize Div.
TEN	Tennessee Chemical Co.
TMH	Thompson Hayward Chemical Co.
TWA	Ethyl Corp.
TWI	Gillette Co., Chemical Div.
TX	Texaco, Inc., Texaco Chemical Co.
UCC	Union Carbide Corp.
UDI	Petrochemicals/Desoto, Inc.
UNN	United Chemical Corp. of Norwood
UPF	Jim Walter Resources, Inc., CIC Div.
USR	Uniroyal, Inc., Chemical Group
VAL	United Merchants & Manufacturers, Inc., Valchem Div.
VND	Van Dyk, Div. of Mallinckrodt, Inc.
VPC	Mobay Chemical Corp., Dye & Pigment Div.
VST	Vista Polymers, Inc.
WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
WBG	White & Bagley Co.
WCC	White Chemical Corp.
WHW	Whittemore-Wright Co., Inc.
WM	Inolex Chemicals Co.
WPC	West Point-Pepperell, Inc., Grifftex Chemical Co. Sub.
WTC	Witco Chemical Corp.
WVA	Westvaco Corp., Chemicals Div.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

STATISTICAL HIGHLIGHTS

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Pesticides and related products include fungicides, herbicides, insecticides, rodenticides, and related products such as plant growth regulators, seed disinfectants, soil conditioners, soil fumigants, and synergists. The data are given in terms of 100 percent active materials; they exclude such materials as diluents, emulsifiers, and wetting agents.

U.S. production of pesticides and related products in 1984 amounted to 1,189 million pounds--17.6 percent greater than the 1,017 million pounds reported for 1983 (table 1).[1] Sales in 1984 were 1,108 million pounds, an increase of 8.9 percent, as compared with 1,017 million pounds reported in 1983; the value of sales was $4,730 million in 1984, compared with $4,054 million in 1983--an increase of 16.7 percent.

The output of cyclic pesticides and related products amounted to 843 million pounds in 1984--18.5 percent greater than the 711 million pounds produced in 1983. Sales in 1984 were 809 million pounds, valued at $3,557 million, compared with 728 million pounds, valued at $3,048 million, in 1983.

Production of acyclic pesticides and related products in 1984 amounted to 347 million pounds, compared with 306 million pounds reported for 1983. Sales in 1984 were 299 million pounds, compared with 289 million pounds reported for 1983; the value of sales were $1,174 million in 1984, compared with $1,006 million in 1983.

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[1] See also table 2, which list these products and identifies the manufacturers by codes. These codes are given in table 3.

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TABLE 1.--PESTICIDES AND RELATED PRODUCTS: U.S. PRODUCTION AND SALES, 1984

[Listed below are all pesticides and related products for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accpeted in confidence and may not be published or where no data were reported). Table 2 lists all pesticides and related products for which data on production and/or sales were reported and identifies the manufacturers of each]

PESTICIDES AND RELATED PRODUCTS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	1,189,169	1,107,906	4,730,311	$4.27
CYCLIC				
Total	842,703	809,033	3,556,700	4.40
Fungicides, total	100,447	89,829	248,857	2.77
Naphthenic acid, copper salt	2,999	1,949	1,890	.97
All other cyclic fungicides[2]	97,448	87,880	246,967	2.81
Herbicides and plant growth regulators, total	590,163	576,364	2,525,362	4.38
3',4'-Dichloropropionanilide (Propanil)	15,788	16,469	39,509	2.40
All other cyclic herbicides[3]	574,375	559,895	2,485,853	4.44
Insecticides and rodenticides, total	152,093	142,840	782,481	5.47
Organophosphorus insecticides[4]	78,168	67,934	300,874	4.43
All other cyclic insecticides and rodenticides[5]	73,925	74,906	481,607	6.43
ACYCLIC				
Total	346,466	298,873	1,173,611	3.93
Fungicides, total	22,664	21,964	42,703	1.94
Methylenebis(thiocyanate)	383	...	...	...
All other acyclic fungicides[6]	22,281	21,964	42,703	1.94
Herbicides and plant growth regulators[7]	126,269	107,829	605,868	5.62
Insecticides, rodenticides, soil conditioners, and fumigants, total	197,533	169,080	525,040	3.11
Organophosphorus insecticides[8]	57,093	47,787	240,823	5.04
All other acyclic insecticides, rodenticides, soil conditioners, and fumigants[9]	140,440	121,293	284,217	2.34

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[1] Calculated from unrounded figures.

[2] Includes benomyl, captafol, captan, chlorothalonil, dinocap, DMTT, folpet, PCP, PMA, and others.

[3] Includes alachlor, atrazine, benefin, bensulide, 2,4-D and other 2,4-D esters and salts, dicamba, dinitrophenol compounds, diuron, DNBP, isopropyl phenylcarbamates (IPC and CIPC). maleic hydrazide, molinate, MPA, picloram, triazines, trifluralin, uracils, plant growth regulators, and others.

[4] Includes diazinon, dioxathion, methyl parathion, and other phosphorothioates and phosphorodithioates.

[5] Includes carbaryl, carbofuran, chlorinated insecticides (chlordan, chlorobenzilate, heptachlor, and others), insect attractants, DEET and other insect repellents, small amounts of rodenticides, and others.

[6] Includes dithiocarbamates.

[7] Includes butylate, dalapon, EPTC, methanearsonic acid salts, thiocarbamates, and organophosphorus herbicides, and others.

[8] Includes acephate, disulfoton, ethion, malathion, phorate, and other organophosphorus insecticides.

[9] Includes aldicarb, chloropicrin, methomyl, methyl bromide, soil conditioners and fumigants, small quantities of rodenticides, and others.

Note.--Does not include data for the insect fumigant, p-dichlorobenzene, nor the fungicide, o-phenylphenol. These data are included in the section on "Cyclic Intermediates." It also does not include data for the fungicides, dimethyldithiocarbamic acid, sodium salt and dimethyldithiocarbamic acid, zinc salt (i.e., ziram). These data are included in the section on "Rubber-Processing Chemicals." The data for ethylene dibromide, a fumigant, are included in the "Miscellaneous End-Use Chemicals and Chemical Products" section.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
*FUNGICIDES:	
2-Bromo-4'-hydroxyacetophenone	BKM.
α-(2-Chlorophenyl)-α-(4-chlorophenyl)-5-pyrimidinemethanol	LIL.
α-(2-Chlorophenyl)-α-(4-fluorophenyl)-5-pyrimidinemethanol	LIL.
2,4-Dichloro-6-(o-chloroanilino)-s-triazine	CHG.
1,4-Dichloro-2,5-dimethoxybenzene (Chloroneb)	CHF.
Di[phenylmercuric]dodecenyl succinate	TRO.
Hexahydro-1,3,5-triethyl-s-triazine	VNC.
Hexahydro-1,3,5-tri(2-hydroxyethyl)-s-triazine	X.
2-Mercaptobenzothiazole, sodium salt	NOD.
Mercaptobenzothiazole, zinc salt	VNC.
Mercury fungicides, cyclic, all other	NOD.
Methyl-1-(butylcarbamoyl)-2-benzimidazolecarbamate (Benomyl)	DUP, USR.
2,2'-Methylenebis(4-chlorophenol) (dichlorophene)	GIV.
2-(1-Methyl-n-heptyl)-4,6-dinitrophenyl crotonate (Dinocap)	RH.
*Naphthenic acid,copper salt	CCA, MCI, NOD, TRO.
2-n-Octyl-4-isothiazolin-3-one	FER, RH.
Pentachlorophenol (PCP)	FRO, RCI.
Phenylmercuric acetate (PMA)	COS, TRO.
Phenylmercuric ammonium acetate	COS, TRO.
Phenylmercuric oleate	COS, TRO.
8-Quinolinol, citrate salt	SOL.
8-Quinolinol, copper salt	NOD, SOL.
8-Quinolinol, magnesium salt	FMT.
8-Quinolinol, sulfate salt	SOL.
cis-N-[(1,1,2,2-Tetrachloroethyl)thio]-1-cyclohexene-1,2-dicarboximide (Captafol)	SOC.
2,4,5,6-Tetrachloroisophthalonitrile	SDS.
Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione (DMTT)	MRK, USR, VCC.
2-(Thiocyanomethylthio)benzothiazole	BKM.
N-[(Trichloromethyl)thio]-4-cyclohexene-1,2-dicarboximide (Captan)	SFA, SFC, VNC.

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TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*FUNGICIDES--CONTINUED:	
N-(Trichloromethylthio)phthalimide (Folpet)	SFA.
1,3,5-Tri(2-isopropanol)-s-triazine	EFH.
Cyclic fungicides, all other	LIL, NOD.
*HERBICIDES AND PLANT GROWTH REGULATORS:	
3-Amino-2,5-dichlorobenzoic acid, ammonium salt (2,5-Dichloro-3-aminobenzoic acid, ammonium salt)	GAF, UCC.
4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5-(4H)-one	CHG, DUP.
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	DOW.
2,4-Bis(isopropylamino)-6-(methylthio)-s-triazine (Prometryn)	CGY.
5-Bromo-3-sec-butyl-6-methyluracil (Bromacil)	DUP.
2-(tert-Butylamino)-4-ethylamino-6-(methylthio)-s-triazine	CGY.
3-tert-Butyl-5-chloro-6-methyluracil	DUP.
N-Butyl-N-ethyl-α,α,α-trifluoro-2,6-dinitro-p-toluidine (Benefin)	LIL.
Butyl 2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]-phenoxyl]propanoate	X.
N-(Chloroacetyl)-N-(2,6-diethylphenyl)glycine, ethyl ethyl ester	FSN.
2-Chloro-4,6-bis(ethylamino)-s-triazine (Simazine)	CGY.
2-Chloro-4,6-bis(isopropylamino)-s-triazine (Propazine)	CGY.
2-Chloro-2',6'-diethyl-N-(n-butoxymethyl)acetanilide (Butachlor)	MON.
2-Chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide (Alachlor)	MON.
2-Chloro-N-ethoxymethyl-N-(2-ethyl-6-methylphenyl)-acetamide (Acctochlor)	MON.
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene (Oxyfluorfen)	RH.
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine (Atrazine)	CGY, FRI, SHC.
N-(2-Chloroethyl)-α,α,α-trifluoro-2,6-dinitro-N-propyl-p-toluidine (Fluchloralin)	BAS.
2-Chloro-N-isopropylacetanilide (Propachlor)	MON.
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-aminocarbonyl]benzenesulfonamide	DUP.
2-(4-Chloro-2-methylphenoxy)propionic acid, dimethylamine salt	RIV.
5-[2-Chloro-4-(trifluoromethyl)phenoxy]-2-nitrobenzoic acid, sodium salt	RDA.

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TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
Cyano-3-phenoxybenzyl-cis, trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate	NES, X.
3-Cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4-(1H,3H)-dione	DUP.
3,5-Dibromo-4-hydroxybenzonitrile (Bromoxynil)	RDA.
3,6-Dichloro-2-anisic acid (Dicamba)	VEL.
2,6-Dichlorobenzonitrile	USR.
2-(2,4-Dichlorophenoxy)propionic acid, isooctyl ester	RIV.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	DUP.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)	DUP.
*3',4'-Dichloropropionanilide (Propanil)	CYT, RH, VTC.
S-(O,O-Diisopropyl phosphorodithioate) ester of N-(α-mercaptoethyl)benzenesulfonamide (Bensulide)	SFA.
1,1'-Dimethyl-4,4'-bipyridinium dichloride	X.
N,N-Dimethyl-2,2-diphenylacetamide (Diphenamid)	CWN.
N-(1,1-Dimethyl-2-propynyl)-3,5-dichlorobenzamide (Pronamide)	RH.
Dimethyl-2,3,5,6-tetrachloroterephthalate (DCPA)	SDS.
N-[2,4-dimethyl-5-[[trifluoromethyl]sulfonyl]amino]-phenyl]acetamide, diethanolamine salt	MMM.
Dinitrobutylphenol (DNBP)	USR, VTC.
Dinitrobutylphenol, ammonium salt	VTC.
Dinitrobutylphenol, triethanolamine salt	VTC.
2,6-Dinitro-N,N-dipropyl cumidine	LIL.
3,5-Dinitro-N4,N4-dipropylsulfanilamide	X.
2-(Ethylamino)-4-(isopropylamino)-6-(methylthio)-s-triazine (Ametryne)	CGY.
S-Ethyl cyclohexylethylthiocarbamate	SFA.
S-Ethyl-hexahydro-1H-azepine-1-carbothioate (Molinate)	SFA.
N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	ACY.
3-Isopropyl-1H-2,1,3-benzothiadiazin-4(3H)-one 2,2-dioxide	BAS.
Isopropyl N-(3-chlorophenyl)carbamate (CIPC)	PPG, RBC.
Isopropyl N-phenylcarbamate (IPC)	PPG, RBC.
2-(2-Methyl-4-chlorophenoxy)propionic acid, diethanolamine salt	RIV.
2-(2-Methyl-4-chlorophenoxy)propionic acid, isooctyl ester	RIV.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
1-(2-Methylcyclohexyl)-3-phenylurea (Siduron)	ADC, DUP.
Methyl 5-(2',4'-dichlorophenoxy)-2-nitrobenzoate	RDA.
Methyl 2-[[[[(4,6-dimethyl-2-pyrimidinyl)amino]-carbonyl]amino]sulfonyl]benzoate	DUP.
N-1-Naphthylphthalamic acid (NPA)	DRX, USR.
7-Oxabicyclo-[2.2.1]-heptane-2,3-dicarboxylic acid, disodium salt (Endothall)	PAS.
PHENOXYACETIC ACID DERIVATIVES:	
4-Chloro-2-methylphenoxyacetic acid, iso-octyl ester	RIV.
2,4-DICHLOROPHENOXYACETIC ACID, ESTERS AND SALTS:	
2,4-Dichlorophenoxyacetic acid (2,4-D)	DOW, VTC.
2,4-Dichlorophenoxyacetic acid, butoxyethanol ester	DOW.
2,4-Dichlorophenoxyacetic acid, n-butyl ester	VTC.
2,4-Dichlorophenoxyacetic acid, sec-butyl ester	DOW.
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	DOW, PBI, RIV, VTC.
2,4-Dichlorophenoxyacetic acid, ethanolamine and isopropanolamine salts	DOW.
2,4-Dichlorophenoxyacetic acid, iso-octyl ester	DOW, RIV, VTC.
2,4-Dichlorophenoxyacetic acid, isopropyl ester	AMV.
2,4-Dichlorophenoxyacetic acid, lithium salt	GTH.
2,4-Dichlorophenoxyacetic acid, sodium salt	RIV.
2,4-Dichlorophenoxyacetic acid, esters and salts, all other	VEL.
2,4,5-TRICHLOROPHENOXYACETIC ACID, ESTERS AND SALTS:	
2,4,5-Trichlorophenoxyacetic acid, butoxyethanol ester	DOW.
PLANT GROWTH REGULATORS:	
2-Chloro-6-(trichloromethyl)pyridine	DOW.
n-Decanol	USR.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide) (MH)	DRX, FMT, USR.
1,1-Dimethylpiperidinium chloride	BAS.
N-[2,4-dimethyl-5-[[trifluoromethyl]sulfonyl]-amino]phenyl]acetamide, diethanolamine salt	MMM.
Gibberellic acid	ABB.
3-Indolebutyric acid	MRK.
1-Naphthaleneacetic acid (NAA)	GNW.
1-Naphthaleneacetic acid, sodium salt	GNW.
Sodium 5-2-chloro-4-(trifluoromethyl)phenoxy-2-nitrobenzoate	RH.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
α,α,α-Trifluoro-2,6-dinitro-N-ethyl-N-(2-methyl-2-propenyl)-p-toluidine	LIL.
α,α,α-Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin)	LIL.
Cyclic herbicides, all other	CGY, X.
INSECT ATTRACTANTS AND REPELLENTS:	
tert-Butyl 4(or 5)-chloro-2-methylcyclohexane-carboxylate (Trimedlure)	X.
N,N-Diethyltoluamide (DEET)	MRF, TNA, VGC.
p-(Trifluoromethyl)benzaldehyde	X.
Insect attractants, all other	X.
INSECTICIDES:	
Bacillus thuringiensis	ABB, ZOC.
(5-Benzyl-3-furyl)methyl-2,2-dimethyl-3-(2-methylpropenyl)cyclopropane carboxylate (Resmethrin)	PEN.
2,3,4,5-δ^2-Butenylenetetrahydrofurfural	PLC.
2-(p-tert-Butylphenoxy)cyclohexyl-2-propynyl sulfite	ACY, USR.
Cyano(3-phenoxyphenyl)methyl-4-chloro-α-(1-methylethyl)benzeneacetate	SFA.
Cyclic insecticides, all other	PEN.
Cypermethrin	FMN, SHC.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl[(dibutylamino)-thio]methylcarbamate	FMN.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl methyl-carbamate	FMN.
2,2-Dimethyl-1,3-benzodioxol-4-yl N-methylcarbamate	FSN.
Di-n-propylisocinchomeronate	MGK.
Distinnaxane, hexakis(2-methyl-2-phenylpropyl)	SHC.
Isopropyl-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	X.
1-Naphthyl-N-methylcarbamate (Carbaryl)	UCC.
3-(Phenoxyphenyl)methyl-cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethyl cyclopropane-cyclopropanecarboxylate	FMN, X.
Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)-phenyl]ethenyl]-2-propenylidene]hydrozone	ACY.
Tricyclohexyltin hydroxide	X, X.
2,3,5-Trimethylphenol	X.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
INSECTICIDES--CONTINUED	
CHLORINATED INSECTICIDES:	
2-Chloro-N-[[[4-(trifluoromethoxy)phenyl]amino]-carbonyl]benzamide	CHG.
Ethyl 4,4'-dichlorobenzilate (Chlorobenzilate)	CGY.
Heptachloro-tetrahydro-endo-methanoindene (Heptachlor)	VEL.
Hexachloroepoxyoctahydro-endo, endo-dimethanonaphthalene (Endrin)	VEL.
Octachlorohexahydro-4,7-methanoindene (Chlordan)	VEL.
Toxaphene (Chlorinated camphene)	FSN.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor)	CHF.
*ORGANOPHOSPHORUS INSECTICIDES:	
S-[[(p-Chlorophenyl)thio]methyl] O,O-diethyl phosphorodithioate (Carbophenothion)	SFA.
O-(2,4-Dichlorophenyl) O-ethyl S-propyl-phosphorodithioate	CHG.
2-(Diethoxyphosphinylimino)-4-methyl-1,3-dithiolane	ACY.
o-(2-(Diethylamino)-6-methyl (4-pyrimidinyl) o,o-dimethyl phosphorothioate	X.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl)-phosphorothioate (Diazinon)	CGY, VEL.
O,O-Diethyl O-[4-(methylsulfinyl)phenyl]-phosphorothioate	CHG.
O,O-Diethyl O-(p-nitrophenyl)phosphorothioate (Parathion)	MON.
O,O-Diethyl O-3,5,6-trichloro-2-pyridyl-phosphorothioate	DOW.
Dimethyl-3-hydroxyglutaconate dimethyl phosphate (Bomyl)	AMV.
O,O-Dimethyl O-[4-(methylthio)-m-tolyl]-phosphorothioate (Fenthion)	CHG.
O,O-Dimethyl O-(p-nitrophenyl)phosphorothioate (Methyl parathion)	MON.
O,O-Dimethyl S-[(4-oxo-1,2,3-benzotriazin-3(3H)-yl)methyl]phosphorodithioate (Azinphos-methyl)	CHG.
2,3-p-Dioxanedithiol S,S-bis-(O,O-diethyl-phosphorodithioate (Dioxathion)	FSN.
O-Ethyl O-[4-(methylthio)phenyl] S-propyl-phosphorodithioate	CHG.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
INSECTICIDES--CONTINUED	
*ORGANOPHOSPHORUS INSECTICIDES--CONTINUED	
O-Ethyl-S-phenylethylphosphonodithioate	SFA.
Organophosphorus insecticides, cyclic, all other	SHC.
RODENTICIDES:	
3-(α-Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)	MOT.
3-[3-(4'-Bromo[1,1'-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphthalenyl]-4-hydroxy-2H-1-benzopyran-2-one	X.
2-Diphenylacetyl-1,3-indandione and sodium salt	MOT.
2-Isovaleryl-1,3-indandione	MOT.
2-Pivaloyl-1,3-indandione (Pindone)	MOT.
CYCLIC PESTICIDES, ALL OTHER:	
alpha-[2-(2-n-Butoxyethoxy)ethoxy]-4,5-methylenedioxy-2-propyltoluene. (Piperonyl butoxide)	ALP, TNA.
N-(2-Ethylhexyl)bicyclo(2.2.1)-5-heptene-2,3-dicarboximide	MGK.
1-Methyl-3,5,7-triaza-1-azonia tricyclodecane chloride	BKM.
ACYCLIC	
*FUNGICIDES:	
Bis-1,4-bromoacetoxy-2-butene	VIN.
Chloromethoxypropylmercuric acetate	TRO.
1,2-Dibromo-2,4-dicyanobutane	MRK.
Disodium cyanodithioimidocarbonate	BKM.
n-Dodecylguanidine acetate (Dodine)	ACY.
Dodecylguanidine hydrochloride	MRK.
*Methylenebis(thiocyanate)	MRK, SFS, VIN.
Poly[oxyethylene(dimethylimino)ethylene-(dimethylimino)ethylene dichloride]	BKM.
Poly(n,n,n',n'-tetramethylethylenediamine) with (chloromethyl)oxirane	BKM.
DITHIOCARBAMIC ACID FUNGICIDES:	
Dimethyldithiocarbamic acid, potassium salt	ALC, BKM.
Ethylene bis(dithiocarbamic acid), diammonium salt	RBC.
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	ALC, VCC.
Ethylene bis(dithiocarbamic acid), manganese salt (Maneb)	RH.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
DITHIOCARBAMIC ACID FUNGICIDES--CONTINUED	
Ethylene bis(dithiocarbamic acid), manganese salt with zinc ions	RH.
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)	RH.
Hydroxymethyl(methyl)dithiocarbamic acid, potassium salt	BKM.
N-Methyldithiocarbamic acid, potassium salt	BKM.
Dithiocarbamic acid fungicides, acyclic, all other	VCC.
Acyclic fungicides, all other	VCC.
*HERBICIDES AND PLANT GROWTH REGULATORS:	
N,N-Bis(phosphonomethyl)glycine	MON.
2-Chloro-N,N-diallylacetamide (CDAA)	MON.
S-(2,3-Dichloroallyl) diisopropylthiocarbamate (Diallate)	MON.
2,2-Dichloropropionic acid, sodium salt (Dalapon)	DOW.
N-5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl-N,N'-dimethylurea (Tebuthiuron)	MRT.
Ethyl carbamoylphosphonate, ammonium salt	DUP.
S-Ethyl diisobutylthiocarbamate (Butylate)	PPG, SFA.
S-Ethyl dipropylthiocarbamate (EPTC)	PPG, SFA.
Ethyl xanthogen disulfide	RBC.
Methanearsonic acid, disodium salt (DSMA)	VIN.
Methanearsonic acid, monosodium salt (MSMA)	SDS, VTC.
Methylthiosulfonic acid, S-(2-hydroxypropyl) ester	BKM.
N-(Phosphonomethyl)glycine, isopropylamine salt	MON.
S-Propyl butylethylthiocarbamate (Pebulate)	SFA.
S-Propyl dipropylthiocarbamate (Vernolate)	SFA.
Thiocyanic acid, methylene ester	BKM.
S,S,S-Tributyl phosphorotrithioate	CNG.
Tributyl phosphorotrithioite (Merphos)	RDA.
S-(1,2,3-Trichloroallyl)diisopropylthiocarbamate (Triallate)	MON.
PLANT GROWTH REGULATORS:	
2-(Chloroethyl)phosphonic acid	UCC.
N-(Phosphonomethyl)glycine, sodium sesqui salt	MON.
Succinic acid, 2,2-dimethylhydrazide	UCR.
INSECTICIDES:	
2-(2-Butoxyethoxy)ethyl thiocyanate	RH.
Methyl N',N'-dimethyl-N-(methylcarbamoyl)oxy-1-thiooxamidate	DUP.
S-Methyl-N-(methylcarbamoyl)oxythioacetimidate (Methomyl)	DUP, SHC.

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TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
INSECTICIDES--CONTINUED:	
2-Methyl-2-(methylthio)propionaldehyde O-(methylcarbamoyl)oxime (Aldicarb)	UCC.
ORGANOPHOSPHORUS INSECTICIDES:	
S-1,2-Bis(ethoxycarbonyl)ethyl0,0-dimethyl phosphorodithioate (Malathion)	ACY.
2-Carbomethoxy-1-propen-2-yl dimethyl phosphate	AMV, SHC.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled)	AMV, SHC.
O,O-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate (Disulfoton)	CHG.
O,O-Diethyl O-[2-(ethylthio)ethyl]phosphorothioate (Demeton O)	CHG.
O,O-Diethyl S-[(ethylthio)methyl]phosphorodithioate (Phorate)	ACY.
3-(Dimethoxyphosphinyloxy)-N,N-dimethyl-cis-crotonamide	SHC.
O,S-Dimethylacetylphosphoramidothioate (Acephate)	SOC.
O,O-Dimethyl-O-2,2-dichlorovinyl phosphate (DDVP)	AMV, SHC.
S-[[(1,1-Dimethylethyl)thio]methyl] O,O-diethylphosphorodithioate (Turbufos)	ACY.
Dimethyl phosphate of 3-hydroxy-N-methyl-cis-crotonamide	SHC.
O,S-Dimethyl phosphoramidothioate	CHG.
O,O-Dimethyl phosphorochloridothioate	CHG.
O,O,O',O'-Tetraethyl S,S'-methylene-bisphosphorodithioate (Ethion)	FMN.
RODENTICIDES:	
Fluoroacetamide	RBC.
2-Hydroxyethyl n-octyl sulfide	PLC.
Sodium fluoroacetate	RBC, TUL.
SOIL CONDITIONERS:	
Polyacrylonitrile, hydrolyzed, sodium salt	ACY.
SOIL FUMIGANTS:	
1,2-Dibromo-3-chloropropane (DBCP)	AMV.
1,3-Dichloropropene	DOW.
1,3-Dichloropropene,1,2-dichloropropane	SHC.
O-Ethyl S,S-dipropyl phosphorodithioate	RDA.
Methyl bromide (Bromomethane)	GTL, TMA.
N-Methyldithiocarbamic acid, sodium salt (Metham)	BKM, SFA.
Methyl isothiocyanate	MRT.
Trichloronitromethane (Chloropicrin)	LCP, NLO.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
ACYCLIC PESTICIDES, ALL OTHER:	
Bromoacetic acid	VIN.
Diamino acetate	X.
2-[(Hydroxymethyl)amino]-2-methylpropanol	TRO.
2-[(Hydroxymethyl)]ethanol	TRO.
3-Iodo-2-propynyl butylcarbamate	TRO.
Pesticides and related products, acyclic, all other	USR.

TABLE 3.--PESTICIDES AND RELATED PRODUCTS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of pesticides and related products to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ABB	Abbott Laboratories
ACY	American Cyanamid Co.
ADC	Anderson Development Co.
ALC	Alco Chemical Corp.
ALP	Alpha Laboratories, Inc.
AMC	Amvac Chemical Corp.
BAS	BASF Wyandotte Corp.
BKM	Buckman Laboratories, Inc.
CCA	Interstab Chemicals, Inc.
CGY	Ciba-Geigy Corp., Agricultural Div.
CHF	Kincaid Enterprises, Inc.
CHG	Mobay Chemical Crop., Agricultural Chemicals Div.
COS	Cosan Chemical Corp.
CWN	Upjohn Co., Fine Chemicals
CYT	Cumberland International Corp.
DOW	Dow Chemical Co.
DRX	Drexel Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.
EFH	E. F. Houghton & Co.
FER	Ferro Corp., Ferro Chemical Div.
FMN	FMC Corp., Agricultural Chemical Group
FMT	Fairmount Chemical Co., Inc.
FRI	Farmland Industries, Inc.
FRO	Vulcan Materials Co., Chemicals Div.
FSN	Nor-Am Chemical Co.
GAF	GAF Corp., Chemical Group
GN	Givaudan Corp.
GNW	Greenwood Chemical Co.
GTH	Guth Corp.
GTL	Great Lakes Chemical Corp.
LCP	LCP Chemicals-Maine
LIL	Eli Lilly & Co.
MCI	Mooney Chemical, Inc.
MGK	McLaughlin Gormley King Co.
MMM	Minnesota Mining & Manufacturing Co.
MON	Monsanto Co.
MOT	Motomco, Ltd.
MRF	Morflex Corp.
MRK	Merck & Co., Inc.
MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
NES	Ruetgers-Nease Chemical Co.
NLO	Niklor Chemical Co., Inc.
NOD	Nuodex, Inc.
PAS	Pennwalt Corp.
PBI	PBI-Gordon Corp.
PEN	CPC International, Inc., Penick Div.
PLC	Phillips Petroleum Co.
PPG	PPG Industries, Inc.
RBC	Fike Chemicals, Inc.
RCI	Reichhold Chemicals, Inc.
RDA	Rhone-Poulenc, Inc.
RH	Rohm & Haas Co.
RIV	Riverdale Chemical Co.
SDS	S.D.S. Biotech Corp.
	Stauffer Chemical Co.:
SFA	Agricultural Div.
SFC	Calhio Chemicals, Inc.
SFS	Specialty & Intermediates Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SOC	Chevron Corp., Chevron Chemical Co.
SOL	Southland Corp., Fine Chemicals Div.
TNA	Ethyl Corp.
TRO	Troy Chemical Corp.
TUL	Tull Chemical Co., Inc.
UCC	Union Carbide Corp.
USR	Uniroyal, Inc., Chemical Group
VCC	Vinings Chemical Co.
VEL	Velsicol Chemical Corp.
VGC	Virginia Chemicals, Inc.
VIN	Vineland Chemical Co., Inc.
VNC	Vanderbilt Chemical Corp.
VTC	Vertac Chemical Corp.
ZOC	Zoecon Corp.

Note.-- Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SECTION XIV -- MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS

STATISTICAL HIGHLIGHTS

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This section incorporates those end-use groups which are not readily classifiable within the prior sections of this report. Both cyclic and acyclic chemicals fall within this section. With the exception of enzymes and fuel additives, both production and sales of all other end-use groups contained within this section have increased for the first time since 1981.

In 1984, the production of miscellaneous end-use chemicals exceeded 23.7 billion pounds, an increase of 12 percent from the more than 21 billion pounds of production reported for 1983. Sales in 1984 totaled 14.9 billion pounds, valued at $3.8 billion. The sales quantity increased 18 percent from that of 1983 with the value of sales increasing by 15 percent. Polymers for fibers and urea collectively accounted for 82 percent of the 1984 production of these miscellaneous end-use chemicals. Urea accounted for 74 percent of the 1984 sales quantity of these chemicals.

In 1984, the production of lubricating oil and grease additives totaled 1.1 billion pounds, a decrease of 28 percent, compared with 1983. Total sales quantity for 1984 was 1.2 billion pounds, 4.2 percent more than the 1983 sales quantity of 1.2 billion pounds, while the value of sales increased by 8.4 percent to $882 million.

Production of fuel additives for 1984 totaled 1.9 billion pounds, an increase of 33 percent from the previous year. Total sales quantity for 1984 was 1.2 billion pounds, up 26 percent from the 1983 sales quantity of 975 million pounds, with the sales value decreasing 4.8 percent to $504 million.

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TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1984

[Listed below are all miscellaneous end-use chemicals and chemical products for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence any may not be published or where no data were reported.) Table 2 lists all miscellaneous end-use chemicals and chemical products for which data on production and/or sales were reported and indentifies the manufacturers of each]

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE [1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	23,730,943	14,931,451	3,833,667	$0.26
Amino acides and their salts	119,220	106,459	141,774	1.33
Chelating agents, nitrilocids and salts, total	317,607	221,133	104,959	.47
(Ethylenedinitrilo)tetraacetic acid (EDTA)	11,684	9,132	8,912	.98
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate	3,811	4,082	2,823	.69
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	15,530	5,991	3,233	.54
Nitrilo-tris-methylene triphosphonic acid	2,664	...	...	...
Polyamine polymethane phosphonic acid	3,034	...	...	...
All other	280,884	201,928	89,991	.45
Chemical indicators	7	...	...	...
Chemical reagents and fine chemicals	238	214	25,919	121.00
Enzymes, total	(2)	(2)	85,605	(2)
Bacterial amylase	(2)	(2)	15,470	(2)
Glucoamylase	(2)	(2)	32,085	(2)
Pectinase	(2)	(2)	1,837	(2)
Proteases, total	(2)	(2)	25,545	(2)
Rennin	(2)	(2)	12,773	(2)
All other proteases	(2)	(2)	12,772	(2)
All other enzymes	(2)	(2)	10,668	(2)
Flotation reagents	27,034	25,829	11,172	.43
Fuel additives, total [3]	1,914,069	1,225,819	504,101	.41
Gasoline additives, total	1,765,355	...	...	...
Methyl-t-butyl ether	1,375,506	929,837	147,345	.16
Tetraethyl lead	...	127,971	166,914	1.30
Tetra(methyl-ethyl) lead, (TEL-TML, reacted)	106,554	78,367	102,222	1.30
All other gasoline additives	283,295	...	...	...
N,N'-Disalicylidene-1,2-propane diamine	...	636	2,080	3.27
Fuel additives, all other	148,714	89,008	85,540	.96
Lubricating oil and grease additives, total	1,080,725	1,222,424	882,186	.71
Oil soluble petroleum sulfonates, total	438,355	...	...	...
Oil soluble petroleum sulfonate, barium salt	...	1,936	2,184	1.13
Oil soluble petroleum sulfonate, calcium salt	220,995	282,871	165,979	.59
Oil soluble petroleum sulfonate, sodium salt	...	130,576	58,711	.45
All other oil soluble petroleum sulfonates	217,360	...	...	...
Phenol salts	...	117,628	76,365	.65
Phosphorodithioates (Dithiophosphates)	...	95,850	91,523	.95
Sulfurized sperm oil substitutes	12,150	11,775	6,185	.53
All other lubricating oil and grease additives	630,220	581,788	481,239	.83
Paint driers, naphthenic acid salts: [4] [5]				
Calcium naphthenate	462	481	477	.99
Cobalt naphthenate	3,308	2,677	7,302	2.73
Manganese naphthenate	583	616	562	.91

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Photographic chemicals, total	...	4,367	17,122	$3.92
p-Diethylaminobenzendiazonium chloride	102	99	501	5.05
All other photographic chemicals	...	4,268	16,621	3.89
Poly-α-olefins	...	49,984	49,077	.98
Polymers for fibers, total	6,264,029	565,799	598,318	1.06
Nylon 6 and 6/6	2,031,964	...	...	...
Polyacrylonitrile and acrylonitrile copolymers	642,743	...	...	...
Polyethylene terephthalate	2,292,237	176,430	138,622	.79
All other polymers for fibers	1,297,085	389,369	459,696	1.18
Polymers, water soluble, total	443,745	323,116	442,050	1.37
Cellulose ether and esters	234,756	178,284	255,241	1.43
Polyacrylic acid salts, total	52,470	44,071	27,191	.62
Sodium polyacrylate	20,067	14,927	8,325	.56
All other polyacrylic acid salts	32,403	29,144	18,866	.65
All other water soluble polymers	156,519	100,761	159,618	1.58
Tanning materials, synthetic	26,944	24,050	15,730	.65
Textile chemicals, other than surface-active agents, total	34,573	26,699	15,169	.57
Dimethylolhydroxyethylene urea	20,982	20,248	8,626	.43
Melamine formaldehyde methanol polymers	547	...	...	...
Urea polymers with formaldehyde and methanol	802	908	407	.45
All other tetxile chemicals, other than surface-active agents	12,242	5,543	6,136	1.11
Urea in compounds or mixtures, total	...	11,117,472	894,237	.08
In feed compounds	270,423	218,525	18,770	.09
In liquid fertilizer	3,360,405	2,792,763	248,056	.09
In plastics	646,088	...	...	...
In solid fertilizer	8,954,942	7,597,827	587,213	.08
Urea in compounds or mixtures, all other	...	508,357	40,198	.08
All other miscellaneous end-use chemicals and chemical products[6]	266,439	14,312	37,907	2.65

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[1] Calculated from unrounded figures.

[2] Not available.

[3] Statistics exclude production and sales of tricresyl phosphate. Statistics on tricresyl phosphate are given with the section on "Plasticizers."

[4] Quantities are given on the basis of solid naphthenate.

[5] Statistics exclude production and sales of copper naphthenate. Statistics for copper naphthenate are given in the section on "Pesticides and Related Products."

[6] Includes all other items listed in table 2 which are not individually publishable as groups.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*AMINO ACIDS AND THEIR SALTS:	
METHIONINE AND ITS SALTS:	
Methionine (animal feed grade)	DGC.
Methionine, hydroxy analogue, calcium salt	EKT, MON.
Amino acids and salts, acyclic, all other	IMC, RSA, WAY.
Aspartic acid	ESX, PFZ.
N,N-Dimethylglycine	MCK.
N,N-Dimethylglycine hydrochloride	MCK.
Glutamic acid hydrochloride	LEM.
Glycine (Aminoacetic acid), non-medical	CHT, HMP.
Phenyl alanine	CLP.
Potassium glutamate	LEM.
Protein hydrosylates	BRS.
Sarcosine	HMP.
Amino acids and salts, cyclic, all other	AJI, DIX, HCC, REG.
BIOLOGICAL STAINS:	
Biological stains	ALD, EK, MMC.
*CHELATING AGENTS, NITRILOACIDS AND SALTS:	
N-alkylaminobismethylene phosphonic acid salts	DUP, WAY, X.
Aminotrimethyl phosphonic acid	SCP.
(Diethylenetrinitrilo)pentaacetic acid	ACR, CGY, HMP, WAY.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogenferric salt	CGY.
(Diethylenetrinitrilo)pentaacetic acid, pentasodium salt	CGY, DOW, RPC.
(Diethylenetrinitrilo)pentaacetic acid, sodium salt	WAY.
N,N-Dihydroxyethylglycine, sodium salt	HMP.
N,N-Di-(2-hydroxy-5-sulfonic acid benzyl)glycine, iron salt	HMP.
(Dimethylamino)methylenebisphosphoric acid, trisodium salt	BKH.
Ethanoldiglycine, disodium salt	HMP.
Ethylenebis(-amino-2-hydroxyphenol) acetic acid, hydrogenferric salt	CGY.
(Ethylene-bis-nitrilo)dimethylene phosphonic acid, potassium salt	WAY.
Ethylenediaminetetra(methylene phosphonic acid)	X.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediaminetetraacetic acid) (EDTA)	CGY, DOW, HMP.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CHELATING AGENTS, NITRILOACIDS AND SALTS--CONTINUED	
(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt	CGY, DAN, DOW.
(Ethylenedinitrilo)tetraacetic acid, diammonium salt	CGY, DOW.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, disodium salt	CGY, HMP.
*(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, magnesium salt	HMP.
(Ethylenedinitrilo)tetraacetic acid, manganese salt	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, monoammonium ferric salt	HMP.
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, tetraammonium salt	CGY, DOW.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	CGY, HMP, X.
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	CGY.
Glucoheptonic acid, β-isomer, sodium salt	BLZ.
Glucoheptonic acid, sodium salt	BLZ, PFN, RPC.
Hexamethylenediaminetetra(methylenephosphonic acid)	X.
Hexamethylenediaminetetra(methylenephosphonic acid), potassium salt	WAY.
Hydroxyethane-1-diphosphonic acid	HMP, SCP.
(N-Hydroxyethylethylenedinitrilo)triacetic acid, iron salt	CGY, DOW, HMP.
(N-Hydroxyethylethylenedinitrilo)triacetic acid, magnesium salt	HMP.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	CGY, DAN, DOW, HMP, RPC.
Hydroxyethylidene diphosphonic acid, potassium salt	WAY, X.
Hydroxyethylidene diphosphonic acid, sodium salt	X.
Nitriloacetic acid, zinc salt	HMP.
Nitrilotriacetic acid	HMP.
Nitrilotriacetic acid, trisodium salt	DOW, HMP, MON.
*Nitrilo-tris-methylene triphosphonic acid	BKM, WAY, WCC, X.
Nitrilo-tris-methylene triphosphonic acid, potassium salt	X.
Nitrilo-tris-methylene triphosphonic acid, sodium salt	BAK, WAY, X.

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TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CHELATING AGENTS, NITRILOACIDS AND SALTS--CONTINUED	
2-Phosphonobutane-1,2,4-tricarboxylic acid, sodium salt	X.
*Polyamine polymethane phosphonic acid	SCP, X, X.
Polyamine polymethane phosphonic acid, magnesium salt	RPC.
Chelating agents, nitriloacids and salts, all other	X.
*CHEMICAL INDICATORS:	
*Chemical indicators	EK, GFS, MMC.
*CHEMICAL REAGENTS AND FINE CHEMICALS:	
*Chemical reagents and fine chemicals	ACC(E), ALB, COC, CWN, EK, ESA, GFS, HMY, PAH, PFN, PIC, PLB, RBC, REG, RSA, SOI, UPJ, X, X, X, X.
*ENZYMES:	
HYDROLYTIC ENZYMES:	
AMYLASES:	
*Bacterial amylase	ADM, GBF, GNR, MLS, NBI, PMP.
Fungal amylases	PFZ.
*Glucoamylase	ADM, CRN, GBF, MLS, NBI, PMP.
Amylases, all other	GBF.
*PROTEASES:	
Pancreatin	SPR.
Papain	GBF, PFZ.
Pepsin	CHH, SPR.
Protease (bacterial)	MLS, PMP.
Rennin	CHH, MLS, PFZ.
*Proteases, all other	GBF, GNR, PIC.
OTHER HYDROLYTIC ENZYMES:	
Cholesterol esterase	BCK.
Glucose isomerase	ADM, MLS.
Hydrolytic enzyme mixtures	JFR.
Lipase	GBF.
*Pectinase	GBF, GNR, MLS.
Other hydrolytic enzymes	GNR, MLS, X.
NON-HYDROLYTIC ENZYMES:	
Cholesterol oxidase	BCK, UPJ.
Glucose oxidase	BCK, MLS.
Glucose-6-phosphate dehydrogenase	BCK.
Glycerol kinase	BCK.
Uricase	BCK.
*FLOTATION REAGENTS:	
PHOSPHORODITHIOATES, USED AS FLOTATION REAGENTS:	
Dicresylphosphorodithioic acid	ACY, ESX.
Dicresylphosphorodithioic acid, ammonium salt	ACY.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*FLOTATION REAGENTS--CONTINUED	
PHOSPHORODITHIOATES, USED AS FLOTATION REAGENTS--CONTINUED	
Dicresylphosphorodithioic acid, sodium salt	KCU.
Phosphorodithioates used as flotation reagents, all other	ELC, ESX.
Rosin amines	HPC.
Thiocarbanilide (Diphenylthiourea)	ACY.
XANTHATES AND SULFIDES, USED AS FLOTATION REAGENTS:	
Potassium amylxanthate	ACY.
Potassium hexylxanthate	ESX.
Sodium n-butylxanthate	ESX, USR.
Sodium sec-butylxanthate	ESX.
Sodium ethylxanthate	ESX.
Sodium isobutylxanthate	ESX.
Xanthates and sulfides	PLC, RBC.
Flotation reagents, all other	DOW, PLC.
*FUEL ADDITIVES:	
Adipic acid-diethylenetriamine-epichlorohydrin polymer	X.
DIESEL FUEL ADDITIVES:	
Hexyl nitrate	DUP, TNA.
Diesel fuel additives, cyclic, all other	TNA.
N,N-Dimethyl-1,3-propanediamine polymer with epichlorohydrin, sulfate	X.
*N,N'-Disalicylidene-1,2-propanediamine	DUP, FER, SM.
Ethoxylated hydantoin glycol dicocoate	GLY.
Formaldehyde polymer with ethylenediamine and nonyl phenol derivatives	X.
*GASOLINE ADDITIVES:	
N,N'-Di-sec-butyl-p-phenylenediamine	DUP.
N,N'-Diisopropyl-p-phenylenediamine	DUP.
*Methyl-t-butyl ether	ATR, ENJ, PTT, TPC, TUS.
Methylcyclopentadienylmanganese tricarbonyl	TNA.
*Tetraethyl lead	DUP, TNA, X.
*Tetra(methyl-ethyl)lead, (Tel-tml,reacted)	DUP, TNA, X.
Tetramethyl lead	DUP, TNA, X.
Gasoline additives, all other	SOC.
Imidazoline from tall oil fatty acids and diethylenetriamine	X.
4,4'-Methylenebis(2,6-di-tert-butylphenol)	GTL, TNA.
Methylene-bis(dimethyl)hydantoin and derivatives	GLY.
Mixed aryl diimides	SM.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*FUEL ADDITIVES--CONTINUED	
Phenyl acid phosphate	HDG.
Poly(dimethylimino(2-hydroxytrimethylene)chloride)	X.
Polyethylenepolyamine polymer with 1,4-dihyroxy-2-butyne	X.
Rust preventing additives	ALX.
Sulfurized fatty acid amides, esters, or ester-amides	CXI.
Tetrahydropyrimidine from tall oil fatty acids and propylenediamine	X.
Fuel additives, acyclic, all other	CXI, DUP, SM, TNA.
Fuel additives, cyclic, all other	PAH, TNA.
*LUBRICATING OIL AND GREASE ADDITIVES:	
CHLOROSULFURIZED AND SULFURIZED COMPOUNDS:	
Butadiene styrene copolymer	SOC, TNA.
di-t-Amyl acid phospate	SM.
Hydrocarbon carboxylic acid derivatives	SM, X, X.
Hydrocarbon phosphorous acid, barium salt	X.
Hydrocarbon phosphoryl derivatives	X.
Methylene-bridged polyalkyl phenols	TNA.
*OIL-SOLUBLE PETROLEUM SULFONATES:	
Oil-soluble petroleum sulfonate, ammonium salt	NTL.
*Oil-soluble petroleum sulfonate, barium salt	PAR, TNA, X.
*Oil-soluble petroleum sulfonate, calcium salt	PAR, PLC, SOC, TNA, TX, WTC, X.
Oil-soluble petroleum sulfonate, magnesium salt	WTC, X.
*Oil-soluble petroleum sulfonate, sodium salt	MOR, PAR, SHC, WTC, X.
Oil-soluble petroleum sulfonate, all other	DUP, SHC, SOC, WTC.
Oxidized hydrocarbon mixture	ALX.
*PHENOL SALTS:	
Alkyl phenols	X.
Dodecylphenol, ethylenediamine, formaldehyde polymer, calcium salt	TX.
Dodecylphenol, sulfurized, calcium carbonate overbased salt	TX.
Dodecylphenol, sulfurized, calcium salt	SOC, TX.
Nonylphenol, barium salt	CCA, FER, WTC.
Phenol, magnesium salt	WTC.
PHOSPHORODITHIOATES (DITHIOPHOSPHATES):	
bis(1,3-Dimethylbutyl)phosphorodithioate oleyl amine salt	ELC.
Di-2-ethylhexylphosphorodithioic acid	ELC.
Di-N-propylphosphorodithioic acid	ELC.
Zinc dialkyldithiophosphate	ELC, SOC, TNA, TX.
Zinc dialkylphenol dithiophosphate	SOC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
PHOSPHORODITHIOATES (DITHIOPHOSPHATES)--CONTINUED	
Zinc dibutyl phosphorodithioate	ELC.
Zinc diisodecyl phosphorodithioate	ELC.
Zinc hydrocarbon dithiophosphate	X.
Phosphorodithioates used as lubricating oil an grease additives, all other	TX. X..
SUCCINIMIDES:	
Alkenyl succinimide	SOC, TMA, VTC.
N,N-di(C_{15}-C_{20})-sec-Alkylasparagine	TX.
Dodecenyl-oleyl succinimide	SM.
Dodecenyl-acetic succinimide	SM.
All other specify)	TMA.
SULFUR COMPOUNDS:	
Aliphatic hydrocarbon sulfides	ELC, FER, SOC, TMA, X.
Chlorosulfurized cresylic acids	CCW.
Chlorosulfurized lard oil	FER.
Chlorosulfurized sperm oil	CCW, ELC.
Diisobutylene polysulfide	TMA, TX.
Di-tertiary nonylpolysulfide	PAS.
Sulfurized lard oil	CCW, FER, WBG.
*Sulfurized sperm oil substitutes	CCW, ELC, FER, WTC.
Triisobutylene polysulfide	TX.
Sulfur compounds, all other	WTC, X.
ALL OTHER LUBRICATING OIL AND GREASE ADDITIVES:	
Alkene thiophosphonate	TX.
Alkyl succinic anhydride	SM.
Alkyl terephthalamate	SOC.
Bornyl phenylamine	SOC.
Diisopropyl hydrogen phosphite	SM.
Dimer acid esters and polyesters	EMR.
Dodecenyl succinic acid, benzotriazole salt	SM.
Dodecylphenyl-α-naphthylamine	SM.
Dodecylphenyl-α-naphthylamine, dioctyl diphenylamine co-polymer	SM.
Fatty acid polyamine condensate	SOC.
Lubricating oil and grease additives, acyclic, all other	CRT, CXI, DUP, MON, SM, TMA, VTC, X.
Mixed polyesters	HCC.
Pentaerythritol esters	HCC.
N-phenylbis[n,β-hydroxyethyl]tetrapropenyl succinate	TX.
1,3,4-Thiadiazole, 2,5-bis(dialkyldithio) derivatives	ELC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
ALL OTHER LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
Tributyl phosphite	SM.
Trimethylol propane ester	HCC, QCP, SFS, TMA.
Very high molecular weight (>1000) hydrocarbons	X.
Lubricating oil and grease additives, cyclic, all other	CGY, ENJ, SM, WTC, X.
PAINT DRIERS, NAPHTHENIC ACID SALTS:	
Cadmium naphthenate	CCA.
*Calcium naphthenate	CCA, MCI, NOD, TRO.
Chromium naphthenate	MCI.
*Cobalt naphthenate	CCA, MCI, NOD, SHP, TRO, WTC.
Copper naphthenate	NOD.
Iron naphthenate	CCA, HMP, MCI, NOD.
Lead naphthenate	CCA, MCI, NOD, SHP, TRO, WTC.
Lithium naphthenate	CCA.
*Manganese naphthenate	CCA, MCI, NOD, SHP, SM.
Naphthenate driers, mixed salts	MCI.
Rare earths naphthenate	CCA, NOD.
Strontium naphthenate	CCA.
Zinc naphthenate	CCA, MCI, NOD, SHP, TRO.
Paint dryers, naphthenic acid salts, all other	SHP.
*PHOTOGRAPHIC CHEMICALS:	
N-(2-Acetamidophenethyl)-1-hydroxy-2-naphthamide	TX.
N-2-(4-Amino-N-ethyl-m-toluidino)ethyl methane-sulfonamide	TX, WAY.
2-Amino-5-mercapto-1,3,4-thiadiazole	FMT.
5-Aminotetrazole	FMT.
Aryl alkyl polyether alcohol	DIX.
5-Chlorobenzotriazole	FMT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline zinc choride)	ESA.
Chlorohydroquinone	ESA.
4-Diazo-2,5-diethoxymorpholinobenzene	ALL, ESA.
4-Diazo-3,5-diethoxythiocresol salts	ESA.
2,5-Diethoxy-4-morpholinobenzenediazonium chloride	ALL, ESA.
2,5-Diethoxy-4-morpholinobenzenediazonium sulfate	ALL.
*p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline zinc chloride)	ALL, ESA, FMT.
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	X.
p-Dimethylaminobenzenediazonium chloride] (p-Diazo-N, N-dimethylaniline zinc chloride)	ALL, ESA, FMT.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*PHOTOGRAPHIC CHEMICALS--CONTINUED	
2,5-Dimethylbenzothiazole	FMT.
p-Diphenylaminediazonium sulfate	FMT.
p-(N-Ethylbenzimido)benzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline)-zinc chloride	ESA.
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride (p-Diazo-N-ethyl-N-hydroxyethylaniline zinc chloride)	ESA.
(N-Ethyl-N-(2-hydroxyethyl)-3-methyldehydrogen sulfate)p-phenylenediamine	X.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	WAY.
N-Ethyl-N-(β-methane sulfonamidoethyl)toluene-2,5-diaminesulfate	X.
Hydroquinone (Hydroquinol)	EKT.
p-[(2-Hydroxyethyl)methylamino]benzenediazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline)-zinc chloride	ESA.
2-Hydroxynaphthoic ethylamide	FMT.
4-Methoxy-1-naphthol	X.
p-Methylaminophenol sulfate (Metol)	EK.
2-Methylbenzoxazole	FMT.
5-Methyl-1,7-dihydroxy-1,3,4-triazaindolizine	FMT.
4,4-Methylidene-bis-1(p-sulfophenyl)3-methyl-pyrazolone	FMT.
4-((3-Methyl-5-oxo-1-(4-sulfophenyl)-2-pyrazolin-4-ylidene)methylene)-3-methyl-1-(4-sulfophenyl)-2-pyrazolin-5-one	DUP.
2-Methylthiazoline	FMT.
p-Morpholinyl-2,5-dibutoxybenzene diazonium chloride	ALL
6-Nitrobenzimidazole	FMT.
5-Nitrobenzimidazole nitrate	EK.
1-Phenyl-3-pyrazolidone	CWN, EK.
Poly(acrylic acid, ethyl ester)	DUP.
Poly(acrylic acid, methyl ester/ethylene/1,1-dichlorosuccinic acid, methylene-)	DUP.
Poly(acrylic acid, methyl ester/ethylene/1,1-dichlorosuccinic acid, methylene-) with ethyl acrylate	DUP.
Poly(vinyl-O-sulfobenzal)	DUP.
4-N-(1-Pyrrolidyl)-m-toluenediazonium chloride	ALL, ESA.
Photographic chemicals, all other	DUP, EK, ESA, FMT.
POLYALPHAOLEFINS:	
*Poly-α-olefins	CO, SM, TNA.
Poly-α-olefins, sulfurized	SM.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
POLYMERS FOR FIBERS:	
Cellulose acetate	CEL, EKT, MIL.
Cerex/nylon polymer	MON.
Copolyurethane urea	DUP.
Linear saturated polyester	EKT.
*Nylon 6 and 6/6 (Polymer for fiber only)	ACS, DUP, MON, SKP.
*Polyacrylonitrile and acrylonitrile copolymers	ACY, DUP, MON, SFS.
*Polyethylene terephthalate	CEL, DUP, EKT FRF, GYR.
Poly-m-phenylene isophthalamide	DUP.
Poly-p-phenylene terephthalamide	DUP.
Polymers for fibers, all other	HST.
*POLYMERS, WATER SOLUBLE:	
*CELLULOSE ETHERS AND ESTERS:	
Cationic cellulosic ether	UCC.
Hydroxyethylcellulose	UCC, X.
Methylcellulose	DOW.
Sodium carboxymethylcellulose (100%)	BUK, CBC, LCS, MAK, X, X.
Cellulose ethers and esters, all other	X.
Acrylamide-2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	ACY, MRK, X.
Acrylamide-acrylic acid copolymer	CHP, CIN, DA, X.
Acrylamide-acrylic acid copolymer, sodium salt	BKM, SNW, X.
Acrylamide copolymer with N,N,N-trimethyl-2-(2-methyl-1-oxo-2-propenyloxy)ethaniminium methyl sulfate	BKM, CIN.
Acrylamide N-dimethylaminomethylacrylamide copolymer	CPS.
Acrylamide-trimethylaminoethyl methacrylate chloride	CIN.
Acrylamide vinyl amino copolymer	X.
Adipic acid-crosslinked polycrylamide	S(E).
*POLYACRYLIC ACID SALTS:	
Ammonium polyacrylate	BAK, X.
Polyacrylate methacrylate copolymers	ALC, BFG, CRN, X, X.
Sodium ammonium polyacrylate and copolymers	DA, X, X.
*Sodium polyacrylate	ALC, BAK, BFG, BKM, CHP, DA, RH, SYT, X.
Polyacrylic acid salts, all other	ACY.
Dimethylamine epichlorohydrin ethylenediamine copolymer	CPS, X.
Dimethyl diallyl ammonium chloride polymers	SHX, X.
Ethyl acrylate methacrylic acid copolymer	ALC.
Humic acids, sodium salts	X.
Hydroxypropyl guar gum	RPC.
Polyacrylamide	DA, DOW, SNW, X.
Polyacrylamide dimethylammonium ethyl methacrylate	SNW.
Polyacrylate poly(hydroxypropylacrylate) copolymers	X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*POLYMERS, WATER SOLUBLE--CONTINUED	
Polyacrylic acid	X.
Polyacrylonitrile, hydrolyzed	BKM, DIX.
Polyacrylonitrile, starch hydrolized polymer	GPC.
Polyamines	BAK, X.
Polydextrose	PFZ.
Poly(diallyldimethylammonium) chloride	BAK, CPS, MRK, X.
Polyethylene glycol, mono(nonylphenol) sulfate, ammonium salt	BAK.
Polyacrylamide copolymers, all others	BKM, HPC.
Polymaleic anhydride	X.
Polymethacrylic acid, sodium salt	ALC, CPS.
Poly(1,1'-(methylimino)bis(3-chloro-2-propanol)-teetramethylethylenediamine	BKM.
Sodium carboxymethyl amylose	CCL.
Vinyl acetate maleic copolymer, sodium salt	X.
1-Vinyl-2-pyrrolidinone, polymers	CCL, DAN, GAF, UCC, X.
Xanthan gum	PFZ.
Polymers, water soluble, all other	BKM, DA, EFH, HPC, STC, X, X, X.
RARE SUGARS:	
1-Arabinose	PFN.
D-Galactose	PFN.
D-Maltose	PFN.
SILICONE GREASES:	
Silicone greases	DCC, SPD, SWS.
*TANNING MATERIALS, SYNTHETIC:	
Cresol-phenol-formaldehyde condensate and salt	DA.
2-Naphthalenesulfonic acid, formaldehyde condensate and salt	GRD, RH.
1-Phenol-2-sulfonic acid,formaldehyde condensate (Phenol-formaldehyde,sulfonated)	RH.
Polyoxyalkylated cyclic amines	MIL.
*TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS:	
N,N-bis-(2-Hydroxyethyl)octadecanamide	CCC.
N,N-Dibenzylhydroxylamine	CCC.
Dicyanodiamide formaldehyde ammonium chloride polymer	CCC, RPC.
Diethylenetriamine,triethylphosphate, urea polymer, stearate	CCC.
*Dimethyloldihydroxyethylene urea	ACY, CCC, CHP, DAN, RPC, SYT.
Formaldehyde polymer with carbamate esters	SYT.
Hydrogenated tallow fatty acid aminoethylethanolamine condensation products	CCC.
*Melamine formaldehyde methanol polymer	ACY, CCC, SYT.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINURD

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS--CONTINUED	
Melamine formaldehyde triethanolamine mixed fatty alcohols polymer	RPC.
Melamine stearyl alcohol polymer	SYT.
Product from the reaction of stearyl nitrile, candellila wax, paraformaldehyde, phophorous trichloride, and picoline	CCC.
Propoxylated starches	SYT.
Urea, 2-(2-aminoethyl)aminoethanol polymer, stearate	CCC.
*Urea polymers with formaldehyde and methanol	ACY, CCC, CRT, RPC, SYT.
Urea, polymer with tetrakishydroxymethylphosphonium sulfate	CHP.
Textile chemicals, other than surface active agents, all other	ACR, CCC, CRT, DAN, EKT, ENJ, RPC, X.
UREA, BY END-USE MARKETS:	
Urea, primary solution (Report on 100% urea-content basis)	APD, ARM, BNP, BOR, CAC, CFA, CFI, CHN, CNC, FRI, GCC, HKY, MSC, OMC, PLC, SMP, SOC, SOH, TER, TRI, TVA, UOC, WLC, WYC, X.
*UREA IN COMPOUNDS OR MIXTURES (100% BASIS):	
*Urea in feed compounds (100% Basis)	APD, CAC, SOH, TER, TRI, WYC.
*Urea in liquid fertilizer (100% Basis)	ARM, BNP, CFA, CFI, CHN, CNC, FRI, HKY, MSC, PLC, SMP, SOC, SOH, TER, TRI, TVA, WYC, X.
*Urea in plastics (100% Basis)	BOR, OMC, SOH, TRI.
*Urea in solid fertilizer (100% Basis)	APD, CAC, CFA, CFI, CNC, FRI, GCC, MSC, OMC, SOH, TER, TRI, TVA, UOC, WLC, WYC, X.
Urea in compounds and mixtures (100% Basis), all other	BNP, SOH, TER.

TABLE 3.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of miscellaneous end-use chemicals to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
ACC	Atomergic Chemetals Corp.
ACR	CPC International, Inc., Acme Resin Corp.
ACS	Allied Corp., Chemical Sector
ACY	American Cyanamid Co.
ADM	Archer Daniels Midland, ADM Clinton
AJI	Ajinomoto USA, Inc.
ALB	Ames Laboaratories, Inc.
ALC	Alco Chemical Corp.
ALD	Aldrich Chemical Co., Inc.
ALL	Alliance Chemical, Inc.
ALX	Alox Corp.
APD	Atlas Powder Co. Sub. of Tyler Corp.
ARM	U.S. Steel Corp., USS Agri-Chemicals Div.
ATR	Atlantic Richfield Co., Arco Chemical Co.
BAK	Baker International - Magna Corp.
BCK	Beckman Instruments, Inc.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group
BKM	Buckman Laboratories, Inc.
BLZ	Belzak Corp.
BOR	Borden, Inc., Borden Chemical Div.
BNP	Bison Nitrogen Products Co.
BRS	Bristol-Myers Co.
BUK	Buckeye Cellulose Corp.
CAC	Cominco American, Inc.
CBC	Carbose Corp.
CCA	Interstab Chemicals, Inc.
CCC	C.N.C. Chemical Corp.
CCL	Catawba-Charlab, Inc.
CCW	Morton-Thiokol, Inc., Carstab Div.
CEL	Celanese Corp., Celanese Fibers Operations
CFA	Cooperative Farm Chemicals Association
CFI	CF Industries, Inc.
CGY	Ciba-Geigy Corp.
CHH	CHR. Hansen's Laboratory, Inc.
CHN	N-REN Corp., Cherokee Nitrogen Div.
CHP	C. H. Patrick & Co., Inc.
CHT	Chattem, Inc.
CIN	Stockhausen, Inc.
CLP	Cell Products, Inc.
CNC	Columbia Nitrogen Corp.
CO	Conoco Specialty Products, Inc.
COC	Columbia Organic Chemicals Co., Inc.
CPS	CPS Chemical Co., Inc.
CRN	CPC International, Inc., Amerchol Corp.
CRT	Chemos Corp.
CWN	Upjohn Co., Fine Chemicals Div.
CXI	Chemical Exchange Industries, Inc.
DA	Diamond Shamrock Corp., Chemical Co.
DAN	Dan River, Inc., Chemical Products Div.
DCC	Dow Corning Corp.
DGC	Degussa Corp.
DIX	Dixie Chemical Co., Inc.
DOW	Dow Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.
EFH	E. F. Houghton & Co.
EK	Eastman Kodak Co.:
EKT	Tennessee Eastman Co. Div.
ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.
EMR	Emery Industries Div. of National Distillers & Chemical Corp.
ENJ	Exxon Chemical Americas
ESA	East Shore Chemical Co.
ESX	Essex Chemical Corp., Essex Industrial Chemicals, Inc.
FER	Ferro Corp.: Ferro Chemical Div. Keil Chemical Div.
FMT	Fairmount Chemical Co., Inc.
FRF	Firestone Tire & Rubber Co., Firestone Fibers & Textiles Co.
FRI	Farmland Industries, Inc.
GAF	GAF Corp., Chemical Group
GBF	Gist-Brocades U.S.A Inc.
GCC	W. R. Grace & Co., Agricultural Chemicals Group
GFS	G. Frederick Smith Chemical Co.
GLY	Glyco, Inc.
GNR	Genencor, Inc.
GPC	Grain Processing Corp.
GRD	W. R. Grace & Co., Polymers & Chemical Div.
GTL	Great Lakes Chemical Corp.
GYR	Goodyear Tire & Rubber Co.
HCC	Hatco Chemical Corp.
HDG	Hodag Chemical Corp.
HKY	Hawkeye Chemical Co.
HMP	W. R. Grace & Co., Hampshire Chemical Div.
HMY	Humphrey Chemical Co.
HPC	Hercules, Inc.
HST	American Hoechst Corp., Hoechst Fiber Industries Div.
IMC	International Minerals & Chemicals Corp., Industrial Chemicals Div.
JFR	George A. Jeffreys & Co., Inc.
KCU	Kennecott Minerals Co., Utah Copper Div.
LCS	Louisiana Chemical Specialties, Inc.
LEM	Napp Chemicals, Inc.
MAK	MAK Chemicals Corp.
MCI	Mooney Chemicals, Inc.
MCK	MacKenzie Chemical Works, Inc.
MIL	Milliken & Co., Milliken Chemical Co.
MLS	Miles Laboratories, Inc., Biotechnology Group
MMC	EM Industries, Inc., EM Sciences Div.
MON	Monsanto Co.
MOR	Marathon Morco Co.
MRK	Merck & Co., Inc.
MSC	Mississippi Chemical Corp.
NBI	Novo Biochemical, Inc.
NOD	Nuodex, Inc.
NTL	NL Industries, Inc.
OMC	Olin Corp.

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TABLE 3--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1984--CONTINUED

CODE	NAME OF COMPANY
PAH	Parish Chemical Co.
PAR	Pennzoil Co., Penreco Div.
PAS	Pennwalt Corp.
PFN	Pfanstiehl Laboratories, Inc.
PFZ	Pfizer, Inc.
PIC	Pierce Chemical Co.
PLB	Pharmacia P-L Biochemicals, Inc.
PLC	Phillips Petroleum Co.
PMP	PMP Fermentation Products, Inc.
PTT	Petro-Tex Chemical Corp.
QCP	Quaker Chemical Corp.
RBC	Fike Chemicals, Inc.
REG	Regis Chemical Co.
RH	Rohm & Haas Co.
RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.
RSA	R.S.A. Corp.
S	Sandoz, Inc., Colors & Chemicals Div.
SCP	Henkel Corp.
SFS	Stauffer Chemical Co., Specialty & Intermediates Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SHP	Shepherd Chemical Co.
SHX	Sherex Chemical Co., Inc.
SKP	Shakespeare Co., Monofilaments Div.
SM	Mobil Oil Corp., Mobil Chemical Co., Chemical Coatings Div.
SMP	J. R. Simplot Co.
SMW	Sun Chemical Corp., Chemical Div.
SOC	Chevron Corp., Chevron Chemical Co.
SOH	Sohio Chemical Co.
SOI	Specialty Organics, Inc.
SPD	General Electric Co., Silicone Products Dept.
SPR	Scientific Protein Laboratories
STC	American Hoechst Corp., Sou-Tex Works
SWS	Stauffer Chemical Co., SWS Silicones Div.
SYT	Synthron, Inc.
TER	Terra Chemicals International, Inc.
TER	Terra Nitrogen, Inc.
TNA	Ethyl Corp.
TPC	Texas Petrochemical Corp.
TRI	Triad Chemical
TRO	Troy Chemical Corp.
TUS	Texaco Butadiene Co.
TVA	Tennessee Valley Authority
TX	Texaco, Inc., Texaco Chemical Co.
UCC	Union Carbide Corp.
UOC	Union Oil Co. of California
UPJ	Upjohn Co.
USR	Uniroyal, Inc., Chemical Group
VNC	Vanderbilt Chemical Corp.
VTC	Vertac Chemical Corp.
WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
WBG	White & Bagley Co.
WCC	White Chemical Corp.
WLC	Agrico Chemical Co.
WTC	Witco Chemical Corp.
WYC	Wycon Chemical Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

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STATISTICAL HIGHLIGHTS

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The term "miscellaneous chemicals" as it is used here comprises those synthetic organic products that are not included in the use groups covered by sections I-XIV of this report. They include products that are employed in a great variety of uses. The number of chemicals used extensively for only one purpose is not large. Among the products covered in this section are those used for refrigerants, aerosols, solvents, and a wide range of chemical intermediates.

U.S. production of miscellaneous cyclic and acyclic chemicals in 1984 amounted to 92.0 billion pounds, a decrease of 1.4 percent, compared with production in 1983. U.S. sales for 1984 totaled 40.4 billion pounds, valued at $12.0 billion. Compared with 1983, sales quantity increased 3.2 percent, and sales value increased by 6.3 percent. Production of miscellaneous cyclic chemicals composed only 2.8 percent of this section's total production.

The group, among miscellaneous acyclic chemicals, with the greatest volume of production and sales is the halogenated hydrocarbons. Production of halogenated hydrocarbons decreased from 23.7 billion pounds in 1983 to 19.4 billion pounds in 1984, or by 18 percent. Sales of comparable halogenated hydrocarbons rose to 9.0 billion pounds in 1984. Production of chlorinated hydrocarbons, the largest segment of this group, decreased 19.4 percent in 1984 to 18.3 billion pounds, from 22.7 billion pounds in 1983. Sales of chlorinated hydrocarbons amounted to 8.1 billion pounds, valued at $1.5 billion.

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TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984

[Listed below are all miscellaneous cyclic and acyclic chemicals for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all miscellaneous cyclic and acyclic chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	92,008,952	40,386,111	12,042,871	$0.30
CYCLIC				
Total	2,552,388	1,244,956	1,090,529	.88
Benzoyl peroxide	9,247	8,767	20,474	2.34
tert-Butyl peroxybenzoate	3,526	3,484	7,848	2.25
Caprolactam[2]	1,027,115	287,149	189,711	.66
Cumene hydroperoxide	2,016	1,775	1,940	1.09
2,6-Di-tert-butyl-p-cresol (BHT), tech. grade	7,074	7,188	8,297	1.15
Dodecenylsuccinic anhydride	5,791	5,145	4,394	.85
Hexamethylenetetramine, tech. grade	87,594	54,030	18,074	.33
Lactones	...	14,175	14,199	1.00
Maleic anhydride[2]	359,060	313,733	129,567	.41
Pinene and derivatives, total	301,836	...	...	...
β-Pinene	46,480	14,319	3,758	.26
Pine oil, synthetic	42,489	42,132	18,631	.44
All other	212,867	...	...	...
Tall oil salts	2,333	1,697	2,804	1.65
1,3,5-Trichloro-5-triazine-2,4,6-(1H, 3H, 5H)trione	57,624	...	...	...
All other miscellaneous cyclic chemicals	689,112	491,362	670,832	1.37
ACYCLIC				
Total	89,456,564	39,141,155	10,952,342	.28
NITROGENOUS COMPOUNDS				
Total	7,346,336	2,627,061	1,289,435	.49
Amides, total	333,339	148,663	115,209	.77
N,N'-Ethylene bis (oleamide)	380	366	418	1.14
N,N'-Ethylenebis(stearamide)	...	27,365	18,010	.66
All other	332,959	120,932	96,781	.80
Amines, total[3]	1,597,107	495,867	390,480	.79
Butylamines,	35,693	29,708	25,278	.85
Dipropylamine	41,048	25,995	17,870	.69
Ethylamines:				
Diethylamine	18,500	6,836	5,022	.73
Ethylamine, mono-	49,218	...	...	...

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
NITROGENOUS COMPOUNDS--Continued				
Amines[2]--Continued				
Triethylamine	19,359	15,199	12,714	$0.84
Isopropylamine, mono-	47,831	49,324	23,786	.48
Methylamines:				
Dimethylamine	71,026	56,245	26,391	.47
Methylamine, mono-	47,973	...	...	...
Trimethylamine	30,530	21,241	8,875	.42
All other	1,235,929	291,319	270,544	.93
1,3-Diethyl-2-thiourea	411	371	784	2.11
Diethylaminoethyl methacrylate	1,545	1,567	2,610	1.67
Diethyl aminomethyl methacrylate, methyl chloride, quaternary salt	1,775	1,710	2,937	1.72
Ethanolamines, total[2]	504,090	390,607	119,442	.31
2,2'-Aminodiethanol (Diethanolamine)	166,162	132,639	39,955	.30
2-Aminoethanol (Monoethanolamine)	198,274	137,720	41,387	.30
2,2',2''-Nitrilotriethanol (Triethanolamine)	139,654	120,248	38,100	.32
2,2'-(Methylimino)diethanol (Methyldiethanolamine)	...	6,713	7,482	1.11
Nitiles, total	...	1,394,808	455,769	.33
Acetonitrile	28,646	...	...	...
Acrylonitrile	2,219,166	1,194,569	399,202	.33
2-Methyllactonitrile (Acetone cyanohydrin)	1,092,617	...	...	...
All other	...	200,239	56,567	.28
All other nitrogenous compounds	1,567,640	186,755	194,722	1.04
ACIDS, ACYL HALIDES AND ANHYDRIDES				
Total	11,588,463	2,122,095	790,722	.37
Acetic acid, synthetic, 100%[2]	2,618,714	810,948	132,980	.16
Acrylic acid[2]	839,239	145,161	61,363	.42
Fatty acid, hydrogenated	93,891	85,135	30,592	.36
Fumaric acid	49,510	30,239	16,183	.54
Propionic acid	95,867	78,817	17,020	.22
All other acid, acyl halides, and anhydrides	7,891,242	971,795	532,584	.55
SALTS OF ORGANIC ACIDS				
Total	315,897	303,355	244,957	.81
Acetic acid salts, total	23,337	20,933	14,483	.69
Calcium acetate	722	748	682	.91
Magnesium acetate	...	91	277	3.05

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
SALTS OF ORGANIC ACIDS--Continued				
Acetic acid salts--Continued				
Potassium acetate	1,393	1,674	1,442	$0.86
Sodium acetate	14,605	...	...	...
Zinc acetate	731	754	826	1.10
All other	5,886	17,666	11,256	.64
2-Ethylhexanoic acid (α-Ethylcaproic acid salts, total	20,834	17,473	28,982	1.66
Calcium 2-ethylhexanoate	2,019	1,950	2,043	1.05
Cobalt 2-ethylhexanoate	5,055	3,655	8,421	2.30
Lead 2-ethylhexanoate	1,087	1,088	1,121	1.03
Manganese 2-ethylhexanoate	1,071	981	965	.98
Nickel 2-ethylhexanoate	984	952	1,567	1.65
Zinc 2-ethylhexanoate	1,062	830	892	1.07
Zirconium 2-ethylhexanoate	3,284	3,022	5,433	1.80
All other	6,272	4,995	8,540	1.71
Oleic acid salts	376	...	...	...
Propionic acid salts:				
Calcium propionate	18,750	...	...	...
Sodium propionate	2,098	...	...	...
Oxalic acid salts:				
Ammonium oxalate	133	112	233	2.08
Potassium oxalate	87	71	157	2.22
Stearic acid salts, total[4]	130,185	122,094	89,909	.74
Aluminum stearates	3,950	3,761	4,762	1.27
Barium stearate	606	...	...	...
Cadmium stearate	119	...	...	...
Cobalt stearate	553	499	916	1.84
Calcium stearate	71,276	72,323	45,386	.63
Magnesium stearate	23,812	16,669	12,198	.73
Zinc stearate	28,328	26,844	24,101	.90
All other	1,541	1,998	2,546	1.27
All other salts of organic acids	120,097	142,672	111,193	.78
ALDEHYDES				
Total	8,396,425	2,153,350	215,268	.10
Butyraldehyde	1,244,782	36,739	6,774	.18
Formaldehyde (37% by weight)[2]	5,814,501	1,819,857	117,424	.06
Isobutyraldehyde	308,578	...	...	...
Propionaldehyde	225,320	11,674	2,961	.25
All other aldehydes	803,244	285,080	88,109	.31

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
ACYCLIC--Continued				
KETONES				
Total	2,719,689	2,396,866	551,792	$0.23
Acetone:[2]				
From cumene	1,739,293	1,473,035	252,741	.17
From isopropyl alcohol	123,195	...	...	...
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol	...	41,471	15,295	.37
Methyl ethyl ketone (2-Butanone)[2]	543,291	557,414	153,933	.28
4-Methyl-2-pentanone (Methyl isobutyl ketone)	143,328	137,523	54,250	.39
All other ketones	170,582	187,423	75,573	.40
ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED				
Total	16,017,260	9,003,842	1,525,113	.17
Alcohols, C_{11} or lower, unmixed, total	14,929,068	...	...	...
Butyl alcohols, total	2,946,972	...	...	...
n-Butyl alcohol (n-Propylcarbinol[2]	907,570	425,497	100,582	.24
Isobutyl alcohol (Isopropylcarbinol[2]	163,150	99,455	20,530	.21
All other	1,876,252	...	...	...
Ethyl alcohol, synthetic[2] [5]	1,060,476	1,169,007	288,449	.25
2-Ethyl-1-hexanol[2]	541,061	363,768	115,965	.32
Isopropyl alcohol[2]	1,394,417	918,266	203,870	.22
Methanol, synthetic[2]	8,185,774	3,813,881	229,212	.06
Propyl alcohol (Propanol)	149,583	102,977	33,811	.33
All other	650,785	...	...	...
Mixtures of alcohols:				
C_{11} or lower only	282,309	140,166	59,271	.42
C_{12} or higher only	546,540	251,371	141,666	.56
All other alcohols, monohydric, unsubstituted	259,343	1,719,454	331,757	.19
ESTERS OF MONOHYDRIC ALCOHOL				
Total	5,294,637	2,867,772	1,169,573	.41
Butyl acetates:				
n-Butyl acetate	154,711	124,652	51,798	.42
Isobutyl acetate	82,872	59,425	20,911	.35
Butyl acrylate	423,976	205,851	100,613	.49
tert-Butyl peroxy-2-ethylhexanoate	2,010	2,033	6,623	3.26
tert-Butyl peroxypivalate	2,144	2,071	7,712	3.72
Dibutyl maleate	3,393	3,427	1,930	.56
2-Ethoxyethyl acetate	136,683	135,758	62,954	.46
Ethyl acetate (100% basis)[2]	210,425	172,182	48,125	.28
Ethyl acrylate	306,376	174,533	72,439	.42
2-Ethyl-1-hexyl acrylate	87,158	67,406	38,760	.58

See footnote at end of table.

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TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
ACYCLIC--Continued				
ESTERS OF MONOHYDRIC ALCOHOLS--Continued				
Fatty acid esters, not included with plasticizers or surface-active agents, total	20,321	19,927	14,632	$0.73
Myristyl myristate	259	252	396	1.57
Tridecyl stearate	1,482	1,466	1,218	.83
All other	18,580	18,209	13,018	.71
Methyl methacrylate[2]	916,516	241,535	116,302	.48
Phosphorus acid esters, not elsewhere specified	101,071	79,516	88,333	1.11
Propyl acetate	62,538	54,801	25,247	.46
Tetraethyl orthosilicate	5,828	6,962	7,485	1.08
Vinyl acetate[2]	2,023,884	1,193,398	276,736	.23
All other esters of monohydric alcohols	754,731	324,295	228,973	.71
POLYHYDRIC ALCOHOLS				
Total[5]	4,816,792	3,960,824	1,090,092	.28
1,4-Butadediol	343,702	94,343	65,153	.69
Ethylene glycol[2]	3,223,826	2,900,033	600,092	.21
Pentaerythritol[2]	120,587	107,070	55,152	.52
Propylene glycol[2]	462,090	486,925	171,087	.35
Sorbitol (70% by weight)	191,134	139,950	50,116	.36
All other polyhydric alcohols	475,453	232,503	148,492	.64
POLYHYDRIC ALCOHOL ESTERS[6]				
Total	207,572	203,510	140,834	.69
POLYHYDRIC ALCOHOL ETHERS				
Total	1,847,035	1,339,417	488,306	.36
2-Butoxyethanol[2]	270,500	243,594	80,448	.33
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	66,530	56,153	23,107	.41
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)	10,579	4,463	2,202	.49
Diethylene glycol[2]	535,252	324,588	57,040	.18
Dipropylene glycol	48,143	47,590	16,164	.34
2-Ethoxyethanol	167,594	71,923	26,815	.37
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	31,836	23,224	8,382	.36
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	24,789	...	...	...
Polyethylene glycol	69,974	66,180	35,693	.54
Polypropoxy ethers	...	10,215	8,665	.85

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
POLYHYDRIC ALCOHOL ESTERS--Continued				
Polyglycols, ethylene glycol and glycol ether, mixed	5,101	8,616	2,710	$0.31
Polypropylene glycol	11,112	9,715	6,181	.64
Tetraethylene glycol	21,593	19,291	8,151	.42
Triethylene glycol	108,515	102,356	32,394	.32
All other polyhydric alcohol ethers	475,517	351,509	180,354	.51
HALOGENATED HYDROCARBONS				
Total	19,421,089	9,043,328	2,218,389	.25
Chlorinated hydrocarbons, total	18,294,611	8,143,178	1,459,158	.18
Carbon tetrachloride[2]	713,052	351,236	54,467	.16
Chlorinated paraffins (C_{10}-C_{30}):				
35%-64% chlorine	86,018	86,273	31,502	.37
65% or more chlorine	20,389	21,761	9,719	.45
Chloroform[2]	404,581	334,253	86,181	.26
Chloromethane (Methyl chloride)	482,449	268,256	51,537	.19
Dichloromethane (Methylene chloride)[2]	606,731	501,362	117,858	.24
Ethyl chloride (Chloroethane)[2]	290,232	92,319	16,017	.17
Ethylene dichloride (1,2-Dichloroethane)[2]	7,329,771	1,060,336	112,585	.11
Tetrachloroethylene (Perchloroethylene)[2]	573,153	433,638	89,053	.21
1,1,1-Tirchloroethane (Methyl chloroform)[2]	674,540	611,653	184,274	.30
Vinyl chloride, monomer (Chloroethylene)[2]	6,084,612	4,116,833	621,965	.15
All other	1,029,083	265,258	84,000	.32
Fluorinated (including other fluorohalogenated) hydrocarbons, total	1,112,612	...	...	...
Chlorodifluoromethane (F-22)[2]	254,100	177,721	207,239	1.17
Dichlorodifluoromethane (F-12)[2]	336,640	323,404	216,644	.67
Trichlorofluoromethane (F-11)[2]	184,924	174,045	88,996	.51
All other	336,948	...	...	...
All other halogenated hydrocarbons	13,866	224,980	246,352	1.09
ALL OTHER MISCELLANEOUS ACYCLIC CHEMICALS				
Total	10,682,018	2,559,853	1,177,939	.46
Acyclic peroxides:				
2-Butanone peroxide	9,514	9,183	15,169	1.65
Carbon disulfide	...	266,885	44,990	.17
Expoxides, ethers, and acetals, total	8,213,256	1,992,293	611,416	.31
Ethylene oxide[2]	5,698,740	512,212	131,068	.26
All other	2,514,516	1,480,081	480,348	.32

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1984--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE[1]
ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
ALL OTHER MISCELLANEOUS ACYCLIC CHEMICALS--Continued				
Glycidyle ethers	3,810	3,728	7,104	$1.91
Hydrocarbons, not elsewhere specified	14,668	...	...	...
Organo-boron compounds	1,067	985	4,083	4.14
Phosgene (Carbonyl chloride)	1,221,992	...	...	...
Silicone fluids	166,346	90,254	182,193	2.02
All other miscellaneous acyclic chemicals	1,051,365	196,525	312,984	1.59
MIXTURES NOT SPECIFICALLY ITEMIZED				
Total	803,351	559,882	49,922	.09
Glycol residues	8,156	5,398	1,426	.26

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[1] Calculated from unrounded figures.

[2] The difference between the production reported here and that shown on the Preliminary Report on U.S. Production of Selected Organic Chemicals (including Synthetic Plastics and Resin Materials, 1984, results from a combination of incorrect reporting by some companies, end-of-year inventory adjustments, and rounding.

[3] Statistics exclude production and sales of fatty amines. Statistics on fatty amines. Statistics on fatty amines are included in the section "Surface-Active Agents."

[4] Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."

[5] Statistics for production of specially denatured alcohol, 214,465,472 wine gallons, and completely denatured alcohol, 202,303,863 wine gallons, for calendar year 1984 are compiled from data supplied by the Bureau of Alcohol, Tobacco, and Firearms. Withdrawals of completaly denatured alcohol for fuel use was 126,344,405 wine gallons; nearly all specially denatured alcohol is considered to be used for fuel.

[6] Some polyols which are used as intermediates for urethanes have been included in the section "Plastics and Resin Materials."

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
6-Acetoxy-2,4-dimethyl-1,3-dioxane	GIV.
Acetylcyclohexane sulfonyl peroxide	WTC, WTL.
Alkylphenol formaldehyde condensate, alkoxylated	X.
Alkylphenol formaldehyde copolymer	X.
Aluminum dodecyl benzene sulfonate trimer	KCH.
1-(2-Aminoethyl)piperazine	DOW, TX, UCC.
1-(2-Amino ethyl)piperazine adipamide	MET.
1-(3-Aminopropyl)morpholine	TX.
Amyl p-dimethylaminobenzoate	VND.
Amyl ortho- and para- dimethylaminobenzoates	VND.
Benzothiazole	RCI, X.
Benzotriazole, substituted	CGY, X.
*Benzoyl peroxide	AZT, CAD, NOC, PLC, WTC, WTL.
Benzyl alcohol	KLM, SFS.
Benzyl chloroformate	ESX.
Benzyl cocoalkyl dimethyl ammonium chloride	BAK.
Bisp-chlorobenzoylperoxide	CAD.
Bis(2,4-dichlorobenzoyl) peroxide	CAD, WTL.
Bis(α,α-dimethylbenzyl)peroxide	WTL.
2,2-Bis(ferrocenyl)propane	ARA.
Bis(hydroxymethyl)oleyl oxazoline	ANG.
Bis(1,1,3,3-methyl-butyl-phenyl)ether	HEX.
Bis(perfluoroalkyl ethyl)bis(3-chlor-2-hydroxypropyl) pyromellitate	SNW.
1,1-Bis3,3,5-trimethyldicyclohexane	WTL.
Bis(triphenylsilyl)chromate	ARA.
Boron fluoride - phenol complex	ACS.
Bromochloro-5,5'-dimethyl hydantoin	GLY.
β-Bromo-β-nitrostyrene	GIV.
2-Butoxyethyl benzoate	X.
Butyl benzoate	MRF, TCC.
4-tert-Butylcyclohexyl peroxydicarbonate	CAD.
tert-Butyl-α,α-dimethylbenzoyl peroxide	WTL.
tert-Butylhydroquinone	EKT.
Butyl and isopropyl pthalimides	RPC.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
2(and 3)-tert-Butyl-4-methoxyphenol (BHA)	EKT.
*tert-Butyl peroxybenzoate	AZT, FRE, WTC, WTL.
tert-Butyl peroxy-3,5,5-trimethyl cyclohexane	CAD.
4-tert-Butylpyrocatechol	CRZ.
Camphene	SCM, X.
*Caprolactam (2-Oxohexamethylenimine)	AFP, BLY, CNP, DBC.
Caprolactam magnesium bromede	X.
Cellulose acetate hexahydrophthalate	X.
Cellulose acetate phthalate	EK, UCC.
1-(3-Chloroally)-3,5,7-triaza-1-azoniaadamantane chloride	DOW.
p-(Chloromethyl)phenyl trimethoxysilane	SCM.
Chlorothixanthone	SW.
Cresolsulfonic acid, formaldehyde condensate	STC.
*Cumene hydroperoxide	CLK, FRE, USS, WTC.
α-Cumyl peroxyneodecanoate	WTL.
Cyanuric acid	FMC, MON.
Cyclohexanethiol	PAS.
1,4-Cyclohexylenedimethanol	EKT.
Cyclol chloroacetate	AAC.
Cyclopentenylmagnesium chloride	MHI.
Decabromodiphenyl ether (DBDP)	TNA.
Decahydronaphthalene (Decalin)	DUP.
Dehydroacetic acid or sodium salt	GAN.
Dialkyl naphthalene	X.
1,4-Diazobicyclo(2,2,2)octane	TX, X.
Diazodinitrophenol	HPC.
2,5-Di(benzoyl peroxy)-2,5-dimethylhexane	AZT, WTL.
Di-t-butyl diperoxyphthalate	WTL.
2,5-Di-tert-butylhydroquinone	EKT.
2,4-Di-t-butyl phenyl 3,5-di-t-butyl hydroxybenzoate	FER.
1,3-Dichloro-5,5-dimethylhydantoin	GLY.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acids and salts)	FMC.
1,1-Dicyclohexane	WTL.
Dicyclohexylammonium nitrite	SHC.
Dicyclopentadienylchromium	ARA.
Dicyclopentadienyliron	ARA.
N,N'-Diethyl-N,N'-diphenylurea	VDM.
Diethylene glycol terephthalate	UPF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Di(2-ethylhexyl)chlorendate	VEL.
Di(2-ethylhexyl)-5,6-dicarboxy-4-ethyl-cyclohexyl octanoate	MET.
1,5-Diethyl-2-thio-4,6-pyrimidinedione	TWI.
2,5-Dihydrothiophene-1,1-dioxide (Sulfolene)	PLC.
3,5-Dihydroxy-3,5,dimethyl-1,2-peroxycyclopentane	WTC, WTL.
Diiodomethyl-p-tolyl sulphone	ABB.
Diisopropylbenzene hydroperoxide	HPC.
Diketene	BRD, EKT.
Dimer acid esters with polyethylene glycol hydrogen phthalate and castor oil	BAK.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	ASL.
4,4-Dimethyl oxazolidine	EFH.
4,4-Dimethyl oxazoline	ANG.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol	MRK.
Dioxane (1,4-Diethylene oxide)	DOW, FER, MIL.
1,3-Dioxolane	FER.
Di-para-xylene	WCC.
Diphenyl phosphorochloridate	EK.
Dipropylene glycol salicylate	SBC.
*Dodecenylsuccinic anhydride	BCC, DIX, HMY, MIL.
Dodecyldiphenyl oxide	X.
4-(Dodecyloxy)-2-hydroxybenzophenone	EKT.
Dodecyl pyridinium chloride	TLC.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)	WLN.
6-Ethoxy-12-dihydro-2,2,4-trimethyl quinoline	MON.
Ethoxylated methylglucoside	CRN.
5-Ethyl-1-aza-3,7-dioxabicyclo[3.3.0]octane	ANG.
Ethyl chrysanthemate	SFS.
BENZOIC ACID SALTS:	
Ammonium benzoate	WTK.
Benzenephosphinic acid	SFS.
Cadmium benzoate	VNC.
Lauryl benzoate	MET.
Potassium benzoate	PFZ.
Sodium benzoate, U.S.P.	FB, HCP, JRC, KLM, MAL, PFZ.
Sodium benzoate, tech.	PFZ.
Benzoic acid salts, all other	FB, WTC.
2,6-DI-TERT-BUTYL-P-CRESOL (BHT):	
2,6-Di-tert-butyl-p-cresol, (BHT), food grade	KPT, USR.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*2,6-Di-tert-butyl-p-cresol, (BHT), Technical grade	KPT, SW, UCC, USR.
2-Ethylhexyl benzoate	TCC.
2-Ethylhexyl-p-dimethylaminobenzoate	VND.
Ethyl hydroxymethyl oleyl oxazoline	ANG.
Ethylidine norbornene	UCC.
N-Ethyl-N-methyl morpholinium bromide	RSA.
N-Ethyl-N-methyl pyrolidinium bromide	RSA.
4-Ethylmorpholine	TX.
FURAN DERIVATIVES:	
2-Furaldehyde (Furfural)	BAX, QKO.
[5-(Phenylmethyl)]-3-furfuryl alcohol	PEN.
Tetrahydrofurfuryl alcohol	QKO.
Gallic acid, tech.	MAL.
Glyceryl p-aminobenzoate	VND.
4-Guanyl-1-nitrosoguanyl tetrazine	REM.
Hexabromocyclodecane	GTL.
*Hexamethylenetetramine, tech.	BOR, HMP, NOD, OMC, PLS, WCL.
Homomenthyl salicylate	WTC.
Hydroquinone, di(β-hydroxyethyl) ether	EKT.
p-Hydroxybenzoic acid, butyl ester	KLM.
p-Hydroxy benzoic acid esters	VND.
p-Hydroxybenzoic acid, ethyl ester	KLM.
p-Hydroxybenzoic acid, methyl ester	KLM, LEM.
p-Hydroxybenzoic acid, propyl ester	KLM, LEM.
N-(Hydroxyethyl)piperazine	TCH, UCC.
2-Hydroxy-4-methoxybenzophenone	GLY.
2-Hydroxy-2-methylphenyl propanone	MMC.
α-D-p-Hydroxyphenylglycine methyl ester K	BOC.
1,2,3-Indantrione monohydrate (Ninhydrin)	PIC.
o-Iodobenzoic acid	RSA, SFS.
Isobornyl methacrylate	RH.
*LACTONES:	
Butyrolactone	GAF.
Caprolactone	UCC.
D-Glucoheptono-1,4-lactone, CP	PFN.
Glucono-δ-lactone	PFZ.
Lactones, all other	PFN.
Lanolin acetate	CRN.
Lanolin acid	CRN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Lanolin acid, isopropyl ester	CRN.
Lanolin alcohol acetate	CRN.
*Maleic anhydride	AMO, ASH, DKA, MON, USS.
8-p-Menthyl hydroperoxide	HPC.
4-Methoxyphenol	ASL, EKT.
Methylaziridine	ARS.
Methyl-p-benzoquinone	EK.
2,2'-Methylenebis-(4-methyl-6-tert-butylphenol)	SW.
2,2'-Methylenebis(3,4,6-trichlorophenol) (Hexachlorophene)	GIV, VEL.
4-Methylmorpholine	TX.
1-Methyl-2-pyrolidone,monomer	GAF.
Morpholine	AIP, DOW, TX.
Morpholine salt of p-toluene sulfonic acid	AMB.
Neopentyl glycol dibenzoate	VEL.
5-Nitro-1H-indazole	EK.
Octabromodiphenyl oxide	TWA.
Octadecenyl succinic anhydride	MIL.
Octenylsuccinic anhydride	MIL.
Oxalyl bis(benzylidene hydrazide)	EKT.
Pentaerythritol tribenzoate	VEL.
Phenothiazine	WAG(E).
2-Phenoxyethanol (Ethylene glycol monophenyl ether)	TCH.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether)	EKT.
α-D-Phenylglycine methyl ester K	BOC.
2-Phenoxypropanol	DOW.
Phenylglyoxylic acid methyl ester	SFS.
Phenyl xylyl ethane	HCC, TCC.
Phthalic acid, lead salt, (Dibasic)	ALI.
Picramic acid, sodium salt	SDC.
*PINENE AND DERIVATIVES:	
Pinane	SCM.
Pinane hydroperoxide	SCM.
2-Pinanol (cis and trans)	SCM.
α-Pinene	ARZ, SCM.
*β-Pinene	ARZ, HPC, NCI, SCM.
Pinene, sulfate	ARZ, HPC, NCI.
Pine oil, natural sulfate	NCI.
*Pine oil, synthetic	ARZ, NCI, SCM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Polypropylene glycol glycerol triether and epichlorohydrin bisphenol epoxy resin	BAK.
Polypropylene glycol glyceryl triether (epichlorohydrin-bisphenol a) epoxy resin copolymer, ethoxylated	BAK.
Propoxylated methylglucoside	CRN.
Propylene glycol dibenzoate	VEL.
Propyl gallate	EKT.
2,4(1H,3H)Pyrimidinedione	SCM.
Resorcinol diglycidyl ether	WLN.
Resorcinol monobenzoate	EKT.
ROSIN ACID SALTS:	
Aluminum resinate	DRC.
Rosin acid salts, all other	ALI, SD.
Salicylic acid magnesium salt	KLM, PD.
Sodium benzene phosphinate	SFS.
Stannous octyl phthallate	X.
Stearyl melamine	SHW.
Styrene oxide	UCC.
Succinic anhydride	BCC, SOC.
Sucrose benzoate	VEL.
Tall oil, chemically modified	CCC, FOC, GAF, WVA, X, X, X.
*TALL OIL SALTS (LINOLEIC-ROSIN ACID SALTS):	
Calcium maganese tallate	MCI, SHP.
Calcium tallate	CCA, X.
Cobalt manganese tallate	MCI.
Cobalt tallate	MCI, SHP.
Lead manganese tallate	SHP.
Lead tallate	MCI.
Manganese tallate	MCI, SHP.
Tallow alkyl tallate	X.
Zinc tallate	MCI.
Tall oil salts, all other (Linoleic-rosin acid salts)	SHP, WTC, WTK, X.
TANNIC ACID:	
Tannic acid, N.F.	MAL.
Terpene hydrocarbons, monocyclic (Solvenol)	HPC, MCI, SCM.
Terpene polymers	ARZ.
Tetrabromobisphenol A	GTL, TNA, X.
Tetrabromobisphenol A, ethoxylated	GTL.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Tetrabromobisphenol A (carbonate) oligomer, tribromophenolend-capped	GTL.
n-Tetradecenylsuccinic anhydride	DIX.
1,2,3,4-Tetrahydronaphthalene (Tetralin)	DUP.
Tetrahydrothiophene	PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane)	PLC.
4,4-Thiobis[6-tert-butyl-o-cresol] polymer	CRZ.
Thiophene	PAS.
Triallyl cyanurate	ACY.
Tributyltin benzoate	COS.
3,4,4'-Trichlorocarbanilide	MON.
*1,3,5-Trichloro-s-triazine-2,4,6-(1H,3H,5H)trione (Trichloroisocyanuric acid)	FMC, MON, OMC.
3,3,5-Trimethylcyclohexanol (m-homomenthol)	ARS.
3,5,5-Trimethyl-2-cyclohexene-1-one (Isophorone)	KWJ, UCC.
2,4,6-Trinitroresorcinol and lead derivative	REM.
2,4,6-Triphenoxy-s-triazine	AMB.
Triphenyltin hydroxide	X.
1,3,5-Tris[2-hydroxyethyl]-S-hexahydrotriazine	HLI.
1-Vinyl-2-pyrrolidinone--other copolymers	GAF.
1-Vinyl-2-pyrrolidinone-methylacrylic acid, dimethylamine ethyl ester, copolymer	GAF.
1-Vinyl-2-pyrrolidinone, monomer	GAF.
1-Vinyl-2-pyrrolidinone--vinyl acetate copolymer	GAF.
Cyclic chemicals, all other	ALD, DOW, ESA, GAF, HXL, MRF, NES, PAC, PLC, REG, RH, RSA, SK, STC, TNA, TX, UCC, VDM, VIK, WTK, X, X.
ACYCLIC	
*NITROGENOUS COMPOUNDS:	
Acetamidine hydrochloride	WTC.
Acetamidoethanol (N-Acetyl-ethanolamine)	GAF, SBC.
Acetone oxime	ALB.
Alkyl $C_{12}C_{14}$ amine hydrochloride	COS.
*AMIDES:	
Acetamide	ACS, WTK.
Acrylamide monomer	ACY, SOH, X.
Acrylamide polymer with N,N-Diethyl-N-methyl-2(1-oxo-2-propenyloxy)ethaniminium sulfate	X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMIDES--CONTINUED	
Amido amine salts as curing agents	CEL, PAC, X.
1,1'-Azobisformamide	FMT, OMC, USR.
Bis[2-(octadecylamido)ethyl]-N-(2-cyanoethyl)-N-ethyl ammonium ethyl sulfate	SBC.
Chloro-N-(2-hydroxyethyl)acetamide	GLY.
Coconut oil amide	ARC, CAD, FTX(E).
N,N-Diethyldodecanamide	EK, UPJ.
N,N-Dimethylacetamide	DUP.
N,N-Dimethylacetoacetamide	EKT.
Dimethylaminopropyl methacrylamide	TX.
Dimethyl caprylamide capramide	HAL.
N,N-Dimethylformamide	AIP, DUP, HAL.
Dimethyl oleamide	HAL.
Erucamide	ARC, WTC.
* N,N'-Ethylenebis-oleamide (Oleic acid-ethylenediamine condensate (Amine/acid ratio = 1/2))	CCW, GLY, WTC.
*N,N'-Ethylenebis(stearamide)	CCW, DA, GLY, WTC.
Fish oil fatty acid amide	WTC.
Formaldehyde adduct condensation	COS.
N-(Hydroxymethyl)-formamide	X.
Methacrylamide	DUP.
N-Methylacetamide	ARS, EKT.
Oleamide (Octadecene amide)	ARC, WTC.
Oleoylpalmitamide	HXL.
Oxamide	HML.
Ricinoleamide	MRT.
Stearamide (Octadecane amide)	ARC, WTC.
Stearylerucamide	HXL.
Tallow amide, hydrogenated	ARC, CAD.
N,N,N,N-Tetra(hydrogenated tallowalkyl)butane diamide	ARC.
Amides, all other	ALD, ARS, BRD, DOW, SOL, WTC.
*AMINES:	
Allylamines	SHC, VGC.
Bis-hexamethylenetriamine amine	CXI, DUP, MON.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMINES--CONTINUED	
*BUTYLAMINES:	
n-Butylamine, mono	AIP, PAS.
sec-Butylamine, mono	PAS, VGC.
tert-Butylamine, mono	MON.
Di-n-butylamine	AIP, PAS.
Diisobutylamine	AIP, VGC.
Tri-n-butylamine	AIP, PAS.
n-Butylethylamine	AIP, VGC.
Di-tert-butylethyldiamine	VGC.
Diethylaminoethanethiol HCl	EVN.
Diethylenetriamine	DOW, TX, UCC.
Diisopropylamine	AIP, PAS, UCC.
Dimethylaminopropylamine	TX, UCC.
Dimethylaminopropylamine, propoxylated	TX.
N,N-Dimethylbutylamine	SOL.
1,3-Dimethylbutylamine	MET.
N,N-Dimethylethylamine	SOL.
N-Ethylallylamine	VGC.
ETHYLAMINES:	
*Diethylamine	AIP, PAS, UCC.
*Ethylamine, mono	AIP, PAS, UCC.
*Triethylamine	AIP, PAS, UCC, VGC.
Ethylenediamine	DOW, TX, UCC.
(2-Ethylhexyl)amine, mono	ARC, VGC.
1,6-Hexanediamine (Hexamethylenediamine)	DUP, MON.
n-Hexylamine	CXI, PAS.
*Isopropylamine, mono	AIP, PAS, UCC, VGC.
METHYLAMINES:	
*Dimethylamine	AIP, DUP, GAF, IMC.
*Methylamine, mono	AIP, DUP, GAF, IMC.
*Trimethyl amine	AIP, DUP, GAF, IMC.
Mixed primary T-alkylamines	RH.
Nitrilotriacetonitrile	HMP, VGC.
tert-Octylamine	RH.
Pentaethylenehexamine	UCC.
PENTYLAMINES (AMYLAMINES):	
Dipentylamine	PAS, VGC.
Pentylamine, mono	PAS.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMINES--CONTINUED	
PENTYLAMINES (AMYLAMINES)--CONTINUED	
Tripentylamine	PAS.
Polyalkylene polyamine	DOW.
Poly(oxypropylene)diamine	TX.
PROPYLAMINES:	
Dipropylamine	AIP, PAS, VGC.
*Propylamine, mono	PAS, VGC.
Tripropylamine	PAS, VGC.
Tetraethylenepentamine	CXI, DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine	MON, UCC.
Tetramethylethylenediamine	BKM, RH.
Triethylenetetramine	DOW, UCC.
Amines, all other	ALD, MON, PAC, USR, VEL, X.
2-Aminoethanol hydrochloride	HCP, OMC.
2-Aminoethanol (Monoethanol amine) sulfite	EVN, OMC.
Aminoethoxyethanol	TX.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)	ANG, DOW, HDG, UCC.
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate)	EVN.
2-Amino-2-ethyl-1,3-propanediol	ANG.
Aminoguanidine hydrochloride	REM.
2-Amino-2-(hydroxymethyl)-1,3-propanediol [Tris(hydroxymethyl)aminomethane]	ANG, WTK.
2-Amino-2-methyl-1,3-propanediol	ANG.
2-Amino-2-methyl-1-propanol	ANG.
2-Amino-2-methyl-1-propanol hydrochloride	CCC.
tert-Butylaminoethanol	PAS.
tert-Butylaminoethyl methacrylate	AAC, CPS.
tert-Butylaminoethyl methacrylate	RH.
tert-Butyldiethanolamine	PAS.
1-Butyl-3-ethyl-2-thiourea	PAS.
Butyl isocyanate	UPJ.
2-Chloro-n,n-diisopropylethylamine	SK.
2-Chloro-N,N-dimethylethylamine (Dimethylamino ethyl chloride) hydrochloride	SOL.
2-Chloro-N,N-dimethylpropylamine hydrochloride	SOL.
3-Chloro-2-hydroxypropyltrimethyl ammonium chloride	DOW.
Choline	HFT, RH.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
N-Cocoamidopropyl-N,N-dimethyl-N-sodium acetate, ammonium salt	BAK.
1-(2-Cyanoethyl)ethyl urea	GAF.
Di-amine derivatives of dimer acids	SCP.
2-Dibutylaminoethanol	PAS.
1,3-Dibutyl-3-thiourea	RBC, VNC.
2-Diethylaminoethanol (N,N-Diethylethanolamine)	PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol	PAS, UCC.
2-Diethylaminoethyl acrylate	X.
Diethylaminoethylacrylate, dimethyl sulfate, quaternary salt	CPS.
*2-Diethylaminoethyl methacrylate	BLM, CPS, DUP.
Diethylaminomethylacrylate, methyl chloride, quaternary salt	BLM, CPS.
Diethylaminomethylmethacrylate, methyl chloride, quaternary salt	AAC, BLM, CPS.
Diethylcarbamoyl chloride	GAF.
Diethylenetriamine stearamide	HRT.
Diethylhydroxylamine	PAS.
N,N-Diethyl-N-methyl-2(1-oxo-2-propenyloxy) ethaniminium sulfate	X.
*1,3-Diethyl-2-thiourea	PAS, RBC, VNC.
2-Diisopropylaminoethanol (N,N-Diisopropylethanolamine)	PAS, UCC.
2-Diisopropylaminoethyl methacrylate	DUP.
Dimethylamine epichlorohydrin copolymer	X.
Dimethylamine sulfate	RH.
2-Dimethylaminoethanethiol hydrochloride	EVN.
2-Dimethylaminoethanol (N,N-Dimethylethanolamine)	PAS, PEL, TX, UCC.
Dimethylaminoethyl acrylate	BLM.
Dimethylaminoethyl-3-dimethylaminopropyl ether	TX.
Dimethylaminoethyl methacrylate	AAC, BLM, CPS.
Dimethylaminomethylmethacrylate, dimethyl sulfate, quaternary salt	AAC, BLM, CPS.
Dimethylaminomethanol	X.
2-Dimethylamino-2-methyl-1-propanol hydrochloride	WPG.
1-(Dimethylamino)-2-propanol	ANG, PAS, PEL.
1,1-Dimethylhydrazine	USR.
2,5-Dithiobiurea	PMT.
tert-Dodecyldisuccinamide	GAF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*ETHANOLAMINES:	
*Diethanolamine	DOW, ICI, OMC, TX, UCC.
*Monoethanolamine	DOW, ICI, OMC, TX, UCC.
*Triethanolamine	DOW, ICI, OMC, TX, UCC.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS.
N,N-Ethylenebis(12-hydroxystearamide)	CAS.
Ethylenediamine dihydrochloride	RSA.
1,1-Ethylenediurea	EK.
2-Ethylhexyl nitrate	X.
5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone	SDW.
N-Ethyl-N-hydroxyethyl-1,4-pentanediamine	SDW.
2-Ethyl-2-nitro-1,3-propanediol	ANG.
Formamidinedisulfide dihydrochloride	FKE.
Glycine ethyl ester hydrochloride	SFS.
Hexamethylenediamine adipate (Nylon salt)	BLY, DUP, MON.
N-(2-Hydroxyethyl)-12-hydroxystearamide	CAS.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris-(hydroxymethyl)nitromethane)	ANG.
ISOPROPYLAMINES:	
Monoisopropylamine	DOW.
Diisopropylamine	DOW, X.
Triisopropylamine	DOW.
2-Isopropylaminoethanol	PAS.
Ketimine, tetrafunctional	PAC, SCP.
2-Methoxyethyl carbamate	VAL.
3-Methoxypropylamine	TX.
2-Methylaminoethanol (N-Methylethanolamine)	PAS, UCC.
Methyl carbamate	MSC.
*2,2'-(Methylimino)diethanol (Methyldiethanolamine)	DOW, PAS, UCC.
Methyl isocyanate	UCC.
2-Methyl-2-nitro-1,3-propanediol	ANG.
2-Methyl-2-nitro-1-propanol	ANG.
*NITRILES:	
*Acetonitrile	BKC, DUP, SOH, X.
*Acrylonitrile, monomer	ACY, DUP, MON, SOH.
Adiponitrile	DUP.
2,2'-Azobis[2-methylpropionitrile] (Azobisisobutyronitrile)	DUP.
n-Butyronitrile	EKX, WYT.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*NITRILES--CONTINUED	
Citral nitrile	SBC.
Coconitrile	ARC.
Crotononitrile	RBC.
Cyanoacetic acid	KF.
Cyanoethyl acrylate	TKL.
3-Ethoxypropionitrile	DIX.
Ethyl cyanoacetate	KF.
Hexadecanenitrile	ARC.
Isobutyronitrile	EKX.
Lactonitrile	MON.
Lauronitrile (Dodecyl nitrile)	ARC.
3-Methoxypropionitrile	X.
Methyl cyanoacetate	KF.
Methylisobutyl ketone aminonitrile	HMP.
*2-Methyllactonitrile (Acetone cyanohydrin)	CYR, DUP, MON, RH, SOH.
Oleonitrile (Octodecene nitrile)	ARC.
Pentenenitrile	DUP.
Propionitrile	MON.
Soya nitrile	ARC.
Stearonitrile (Octadecane nitrile)	SHX.
Tallow nitrile	ARC, SHX.
3,3'-Thiodipropionitrile	EVN.
Vinylacetonitrile	ARC.
Nitriles, all other	ALD, DUP, EVN, OMC, RSA, TNA.
Nitromethane	ANG.
1-Nitropropane	ANG.
2-Nitropropane	ANG.
Octadecyl isocyanate	MOB.
Pentaerythritol tetranitrate	DUP, HPC.
Polyvinyl octadecyl carbamate	ESA.
n-Propylaminoethanol	X.
Semicarbazide hydrochloride	OMC.
Tetramethylguanidine	ACY.
Thiosemicarbazide	FMT.
Trimethylamine hydrochloride	X.
Trimethylaminoethyl ethanolamine	EKT.
Nitrogenous compounds, acyclic, all other	ALD, BLY, FKE, LAK, LMI, NES, OMC, RPC, TX, UCC, WTC, X, X, X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES:	
ACETIC ACID, 100%:	
Acetic acid, recovered (100%)	AIP, CEL, EKT, MON, RDA, SD.
*Acetic acid, synthetic (100%)	CEL, EKT, MON, UCC, USI.
ACETIC ANHYDRIDE, 100%:	
Acetic anhydride from acetaldehyde (100%)	EKT.
Acetic anhydride from acetic acid, other than recovered, by the vapor-phase process (100%)	CEL, UCC.
Acetic anhydride from acetic acid, recovered, by vapor-phase process	CEL, PFZ.
Acetyl chloride	WCC.
*Acrylic acid	CEL, DBC, DOW, RH, UCC.
Adipic acid	DUP, MON.
Azelaic acid	EMR.
2,2-bis(Hydroxy-methyl)-propionic acid	IMC.
Bromobutyric acid	GTL.
tert-Butylperoxy maleic acid	WTC, WTL.
Butyric acid	CEL, EKT.
Butyric anhydride	EKT.
Butyryl chloride	WCC.
Castor oil fatty acids, dehydrated	PFZ.
Chloroacetic acid, mono	PFZ.
Citric acid	MLS, PFZ.
Crotonic acid (2-Butenoic acid)	EKT.
Decanoyl chloride	WTL.
2,2-dichloroacetyl chloride	RDA, SHC.
Dimer acid (C_{36} Aliphatic dibasic acid)	EMR, SYL.
Dimethylpropionic acid	ENJ.
Di-n-propylacetic acid	CYL.
Dithiodipropionic acid	EVN.
Dodecanedioic acid	DUP.
1,2-Ethanedisulfonic acid	SK.
2-Ethylhexanoic acid (α-Ethylcaproic acid)	EKT, UCC.
2-Ethylhexanoyl chloride	PPG, WTL.
*Fatty acids, hydrogenated	DRL, GLY, SHX.
Fatty acids, non-hydrogenated	DRL, WVA.
Formic acid, 90%	CEL, UCC.
*Fumaric acid	AGC, MON, PFZ.
Gluconic acid, technical	PFZ.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS ACID ANHYDRIDES, AND HALIDES--CONTINUED	
Glycolic acid (Hydroxyacetic acid)	DUP.
Heptanoic acid	CEL.
Heptanoyl chloride	WCC.
n-Hexadecenylsuccinic anhydride	HMY.
Isethionic acid (2-Hydroxyethanesulfonic acid)	WTC.
Isoascorbic acid (Erythorbic acid)	PFZ.
Isobutyric acid	EKX.
Isobutyric anhydride	EKT.
Isononanoyl chloride	STC, WTL.
Iso-octadecenoic acid	SYL.
Iso-octadecenylsuccinic anhydride	HMY.
Isopentanoic acid	UCC.
Itaconic acid (Methylenesuccinic acid)	PFZ.
LACTIC ACID:	
Lactic acid, edible, 100%	MON.
Lauroyl chloride	WCC, WTL.
Maleic acid	PFW, PFZ.
Malic acid	AGC.
Mercaptoacetic acid (Thioglycolic acid)	EVN.
3-Mercaptopropionic acid	EVN.
Mercaptosuccinic acid (Thiomalic acid)	EVN.
Methacrylic acid	DUP, RH.
Methanesulfonic acid	PAS.
Methanesulfonyl chloride	PAS.
Myristoyl chloride	WCC.
Neodecanoic acid	ENJ.
Nonanoic acid (Pelargonic acid)	CEL, EMR.
Nonanoyl chloride	WCC.
Nonenylsuccinic anhydride	HMY.
Octanoyl chloride	HMY, WCC.
Oleic acid	DRL.
Oleoyl chloride	FTX, HRT, STC.
Oxalic acid	ACS.
Oxalyl chloride	ESA.
Oxidized Fischer Tropsch wax	SMW.
3-Oxo-1,5-pentanedioic acid	SDC.
Palmitoyl chloride	SFS, S[illegible]C, X.
Peroxyacetic acid	FMB, UCC.
Pivaloyl chloride	PPG, VEL, WCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYRIDES, AND ACYL HALIDES--CONTINUED	
Polyacrylic acid	BFG, BKM, RH, SNW, X.
*Propionic acid	CEL, DOW, EKT, UCC.
Propionic anhydride	EKT.
Sebacic acid	WTH.
Sebacoyl chloride	WTL.
Sorbic acid (2,4-Hexadienoic acid)	MON.
Succinic acid	ACS.
Thioacetic acid	EVN.
3,3'-Thiodipropionic acid	EVN.
Thiolactic acid	EVN.
Trifluoroacetic acid	HOC.
Trifluoroacetic anhydride	HOC.
Valeric acid	UCC.
Acids, acid anhydrides, and acyl halides, all other	AAC, ALD, BKM, D&L, EK, FMC, PAS, RDA.
*SALTS OF ORGANIC ACIDS:	
*ACETIC ACID SALTS:	
Aluminum acetate	ACS, NCC.
Ammonium acetate	BKC, WTK.
Barium acetate	BKC.
Butyltin acetate (Dibutyltin diacetate)	UCC.
*Calcium acetate	ACS, HFT, JRC, NCC.
Chromium acetate	SHP.
Copper acetate	BKC.
Lead acetate	BKC.
Lead subacetate	BKC.
*Magnesium acetate	BKC, HCP, JRC, SHP.
Manganese acetate	SHP.
Nickel acetate	BKC, SHP.
*Potassium acetate	ACS, BKC, HCP, JRC, NCC.
*Sodium acetate	ACS, ATL, BKC, EKT, HCP, JRC, NCC, X.
Sodium diacetate	HCP, JRC, NCC.
*Zinc acetate	ACS, BKC, DIX, NCC, SHP, WTK.
Zirconium acetate	CCC, TZC.
Acetic acid salts, all other	X.
Adipic acid, ammonium salt	SOL.
Allylsulfonic acid, sodium salt	IOC.
Aluminum tridecanate	KCH.
Aluminum tris(ethyl acetoacetate)	KCH.
Bis(2-ethylhexyl) phosphate, sodium salt	WPG.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
CITRIC ACID SALTS:	
Ammonium citrate	PFZ.
Calcium citrate	PFZ.
Diethanolamine citrate	X.
Potassium citrate	HXL, MLS, PFZ.
Sodium citrate	HXL, MLS, PFZ, X.
Citric acid salts, all other	WTK.
*2-ETHYLHEXANOIC ACID (ALPHA-ETHYLCAPROIC ACID) SALTS	
Aluminum 2-ethylhexanoate	NOC, WTC.
Barium 2-ethylhexanoate	NOD.
Bismuth 2-ethylhexanoate	SHP.
Cadmium 2-ethylhexanoate	CCA, VNC, WTC.
*Calcium 2-ethylhexanoate	CCA, COS, FER, MCI, NOD, TRO.
Chromium 2-ethylhexanoate	MCI, SHP.
*Cobalt 2-ethylhexanoate	CCA, MCI, NOD, SHP, TRO, WTC.
Cobalt-potassium 2-ethylhexanoate	MCI.
Copper 2-ethylhexanoate	MCI, NOD.
Dibutyltin di-2-ethylhexanoate	COS.
Iron 2-ethylhexanoate	CCA, NOD.
*Lead 2-ethylhexanoate	CCA, COS, NOD, SHP, TRO, WTC.
Lithium 2-ethylhexanoate	WTC.
*Manganese 2-ethylhexanoate	CCA, COS, FER, MCI, NOD, SHP, TRO, WTC.
*Nickel 2-ethylhexanoate	MCI, NOD, SHP, WTC.
Potassium 2-ethylhexanoate	CCA, MCI, PEL.
Rare earths 2-ethylhexanoate	CCA, MCI, NOD.
Sodium 2-ethylhexanoate	BOC, LIL.
Stannous 2-ethylhexanoate	FER, WTC.
*Zinc 2-ethylhexanoate	CCA, COS, MCI, NOD, OMC, SHP, VNC, WTC.
*Zirconium 2-ethylhexanoate	CCA, COS, FER, MCI, NOD, TRO, WTC.
2-Ethylhexanoic acid salts, all other	NOD, WTC.
FORMIC ACID SALTS:	
Calcium formate	IMC.
Potassium formate	HCP.
Sodium formate, refined	WTK.
Sodium formate, technical	BKC, IMC, PST.
Formic acid salts, all other	WTK.
Fumaric acid, lead salt	ALI.
GLUCOHEPTANOIC ACID SALTS:	
Zinc α-glucoheptonate	PFN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
GLUCONIC ACID SALTS:	
Potassium glycolate	HCP, X.
Sodium gluconate	PFN, PFZ, PMP, X.
Glycolic acid, sodium salt	HCP.
2-Hydroxy-3(2-propenyloxy)-1-propanesulfonic acid, sodium salt	AAC.
TERTIARY-ALPHA-ALKYLCARBOXYLIC ACID SALTS (ISOCARBOXYLIC ACID SALTS):	
Calcium t-α-alkylcarboxylate	MCI.
Cobalt t-α-alkylcarboxylate	MCI, MCK.
Copper t-α-alkylcarboxylate	MCI.
Iron t-α-alkylcarboxylate	MCI.
Lead t-α-alkylcarboxylate	MCI.
Manganese t-α-alkylcarboxylate	CCA, MCI.
Mixed t-α-alkylcarboxylic acid salts	MCI.
Zinc t-α-alkylcarboxylate	MCI.
Zirconium t-α-alkylcarboxylate	MCI.
Isononanoic acid, lead salt	CCA.
Isooctanoic acid, calcium salt	CCA.
Isethionic acid, sodium salt	MCB.
Isoascorbic acid, sodium salt (Sodium erythorbate)	PFZ.
LACTIC ACID SALTS:	
Sodium lactate (Nalac)	PFN.
Lactic acid salts, all other	PFN.
LAURIC ACID SALTS:	
Barium cadmium laurate	FER.
Dibutyltin dilaurate	X.
Lauric acid salts, all other	FER, WTC.
Lead salts of menhaden fish oil, c-14 to c-22(lead fishate)	KLC, MCI.
LINOLEIC ACID SALTS:	
Calcium linoleate	CCA.
Cobalt linoleate	CYL, SHP.
Manganese linoleate	SHP.
MALEIC ACID SALTS:	
Dibutyltin maleate	FER.
Tribasic lead maleate	ALI.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
MERCAPTOACETIC ACID (THIOGLYCOLIC ACID) SALTS:	
Ammonium mercaptoacetate	EVN.
Calcium mercaptoacetate	EVN.
Sodium mercaptoacetate	EVN, X.
Mercaptoacetic acid (Thioglycolic acid) salts, all other	CCA.
Mercaptopropionic acid, dibutyltin salt	WTC.
NEODECANOIC ACID SALTS:	
Calcium neodacanoate	CCA, MCI, SHP.
Cobalt neodecanoate	MCI, SHP, UCC.
Lead-cobalt neodecanoate	MCI.
Lead neodecanoate	MCI.
Lithium neodecanoate	MCI.
Manganese neodecanoate	MCI, SHP.
Nickel neodocanoate	MCI.
Rare earths neodecanoate	MCI.
Zinc/calcium/cobalt neodecanoate	MCI.
Zinc neodecanoate	SHP.
Zirconium neodecanoate	MCI, SHP.
OCTANOIC-ACID (CAPRYLIC ACID) SALTS:	
Aluminum octanoate	SYP.
Octanoic acid (Caprylic acid) salts, all other	ALI, WTC.
*OLEIC ACID SALTS:	
Calcium oleate	X.
Copper oleate	MCI, MOD, WTC.
Zinc oleate	MCI.
Oleic acid salts, all other	SHP.
OXALIC ACID SALTS:	
*Ammonium oxalate	ACS, BKC, HML, WTK.
*Potassium oxalate	ACS, BKC, HML, WTK.
Sodium oxalate	BKC, HML, WTK.
PHOSPHORODITHIOIC ACID SALTS (DITHIOPHOSPHATES):	
Potassium dihexyl phosphorodithioate	ACY.
Sodium di-sec-butyl/diethyl phosphorodithioate	ACY.
Sodium di-sec-butyl phosphorodithioate	ACY.
Sodium diethyl phosphorodithioate	ACY.
Sodium dihexyl phosphorodithioate	ACY.
Sodium diisopropyl phosphorodithioate	ACY.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
PROPIONIC ACID SALTS:	
*Calcium propionate	HPT, NCC, PFZ.
Cobalt propionate	MCI, X.
*Sodium propionate	HPT, NCC, PFZ, X.
Propionic acid salts, all other	X.
Silver trifluoroacetate	EK.
Sodium di-2-ethylhexyl sulfosuccinate	WPG.
RICINOLEIC ACID SALTS:	
Ricnoleic acid salts, all other	WTC.
Sodium formaldehyde bisulfite	EK.
Sodium formaldehyde sulfoxylate	DA.
Sodium-N-methyl-N-oleyl taurate	WPG.
Sodium sorbitol borate	ICI.
*STEARIC ACID SALTS:	
*ALUMINUM STEARATES:	
Aluminum distearate	NOC, NOD, SYP, WTC.
Aluminum monostearate	MAL, NOD, SYP.
Aluminum tristearate	NOC, NOD, SYP, WTC, X.
Ammonium stearate	WPG.
*Barium stearate	NOC, NOD, SYP, VNC, WTC.
*Cadmium stearate	SYP, VNC, WTC.
*Calcium stearate	DA, FER, MAL, NOC, NOD, SNW, SYP, WTC.
*Cobalt stearate	MCI, SHP, WTC.
Ferric stearate	WTC.
Lead stearate	WTC.
Lead stearate, dibasic	ALI.
Lithium stearate	NOC, SYP. WTC.
*Magnesium stearate	ALI, MAL, NOD, SYP, WTC.
Nickel stearate	WTC.
Trioxy aluminum tristearate	KCH.
*Zinc stearate	CCC, DA, MAL, NOC, NOD, PLS, SYP, VNC, WTC.
Stearic acid salts, all other	SYP, WTC.
TARTARIC ACID SALTS:	
Potassium sodium tartrate	PFZ.
XANTHIC ACID SALTS, NOT USED FOR FLOTATION:	
Sodium isopropylxanthate	RSX.
Salts of organic acids, all other	ALD, EK, TCH, WTC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
*ALDEHYDES:	
Acetaldehyde	CEL, EKX, UCC.
Acrolein (Acrylaldehyde)	UCC.
*Butyraldehyde	CEL, DBC, EKX, UCC.
Crotonaldehyde	EKT.
2-Ethylhexanal (α-Ethylcaproaldehyde)	EKX, UCC.
2-Ethyl-3-hydroxyhexanal	UCC.
*Formaldehyde (37% HCHO by Weight)	BOR, CBD, CEL, DUP, GAF, GP, HPC, INC, MON, NOD, PKI, RCI, WCL.
Glutaraldehyde	UCC.
Glyoxal	ACY.
*Isobutyraldehyde	CEL, DBC, EKX, TU, UCC.
Isopentaldehyde, mixed isomers	UCC.
Methacrolein (methacrylaldehyde)	RDA.
*Propionaldehyde	CEL, EKX, UCC.
Succinaldehyde-sodium bisulfite complex	EK.
Valeraldehyde (Pentanal)	UCC.
*KETONES:	
*ACETONE:	
*Acetone from cumene	AFP, CLK, DOW, GR, GP, GYR, MON, SHC, SKO, USS.
*Acetone from isopropyl alcohol	EKT, ENJ, SHC, UCC.
Acetone, crude	ATR.
5-Chloro-2-pentanone	SDW.
1-Chloropinacolone	CHG.
Chloro-2-propanone (Chloroacetone)	EK, MRK.
Diisoamyl ketone	EKT.
Diisopropyl ketone (2,4-Dimethyl-3-pentanone)	EKX.
2-Heptanone (Methyl amyl ketone)	EKT.
3-Heptanone (Ethyl butyl ketone)	UCC.
*4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	CEL, SHC, UCC.
Isovalerone (Diisobutyl ketone)	EKT, UCC.
*Methyl ethyl ketone	ATR, CEL, ENJ, SHC, UCC.
5-Methyl-2-hexanone (Methyl isoamyl ketone)	EKT.
*Methyl isobutyl ketone	EKT, ENJ, SHC, UCC.
4-Methyl-3-penten-2-one (Mesityl oxide)	UCC.
Methylpseudoionone	MCI.
Methyl vinyl ketone	PFZ.
2-Octanone (Hexyl methyl ketone)	WTH.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*KEYTONES--CONTINUED	
2,4-Pentanedione (Acetylacetone)	UCC.
3-Pentanone (Diethyl ketone)	EKT, HEX, ORT, UCC.
Pseudoionone	HCI, SCM.
2,6,8-Trimethyl-4-nonanone (Isobutyl heptyl ketone)	UCC.
Ketones, all other	ALD, UCC.
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED:	
*ALCOHOLS, C_{11} OR LOWER, UNMIXED (95% OR MORE PURE):	
Allyl alcohol	FMC.
AMYL ALCOHOLS:	
2-Methyl-1-butanol	UCC.
1-Pentanol	UCC.
*BUTYL ALCOHOLS:	
*n-Butyl alcohol (n-Propylcarbinol)	CEL, DBC, EKX, GAF, SHC, UCC, VST.
sec-Butyl alcohol (Methylethylcarbinol)	ENJ, SHC.
tert-Butyl alcohol (Trimethylcarbinol)	ATR, SHC.
*Isobutyl alcohol (Isopropylcarbinol)	CEL, CPS, DBC, EKX, SHC, UCC.
1-Decanol	TNA, VST.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol)	UCC.
*Ethyl alcohol, synthetic only	CEL, DOW, EKX, SHC, UCC, USI, VST.
*2-Ethyl-1-hexanol	DBC, EKX, SHC, TU, UCC.
n-Heptyl alcohol	EKX.
n-Hexyl alcohol	TNA, VST.
Isodecyl alcohol	ENJ.
Isononyl alcohol	ENJ.
Iso-octadecyl alcohol	SHX.
Iso-octyl alcohol	ENJ.
*Isopropyl alcohol	ACS, ATR, ENJ, SHC, UCC.
*Methanol, synthetic only	AIP, ALM, ATR, BOR, CEL, DUP, EKT, GP, HST, IMC, MON, TID.
2-Methyl-1-pentanol	ENJ, UCC.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	UCC.
1-Octanol	TNA, VST.
2-Octanol (sec-Capryl alcohol)	WTH.
4-Penten-1-ol	ALD.
*Propyl alcohol (Propanol)	CEL, EKX, UCC.
2-Propyn-1-ol (Propargyl alcohol)	GAF.
Alcohols, unmixed C_{11} or lower, all other	ALD, CXI, DOW, SHC, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED--CONTINUED	
*ALCOHOLS C_{12} OR HIGHER, UNMIXED (95% OR MORE PURE):	
Alcohol mixtures, C-$_{12}$ through C-$_{18}$ only	SHC, SHX, TNA, VST, WTH.
Dodecyl alcohol (Lauryl alcohol)	TNA, VST.
1-Hexadecanol (Cetyl alcohol)	CRN, PG, VST
2-Hexyl-1-decanol	SCP.
Isohexacosanol	SCP.
1-Octadecanol (Stearyl alcohol)	CRN, PG, VST.
cis-9-Octadecen-1-ol (Oleyl alcohol)	SHX.
2-Octyl dodecan-1-ol	SCP.
1-Tetradecanol (Myristyl alcohol)	VST.
1-Tridecanol	ENJ.
2,6,8-Trimethyl-4-nonanol	UCC.
MIXTURES OF ALCOHOLS:	
Alcohol mixtures, other	CO, ENJ, SCP, TNA.
*Alcohol mixtures, C-$_{11}$ or lower only	CO, CXI, EKX, ENJ, NCI, PG, SHC, TNA.
*Alcohol mixtures, C-$_{19}$ through C-$_{20}$ only	SHC, TNA, WTH.
*ESTERS OF MONOHYDRIC ALCOHOLS:	
Acrylic monomers, mixed	AAC.
Allyl methacrylate	AAC, BLM, CPS, GLY, SHC.
AMYL ACETATES:	
Amyl acetate (n-Pentyl acetate)	UCC.
Amyl acetates, all other	WTL.
*BUTYL ACETATES:	
*n-Butyl acetate	CEL, DBC, EKT, UCC.
*Isobutyl acetate	CEL, DBC, EKT, EKX, UCC.
Bis[t-butylperoxy]-1,9-nonanedioate	WTL.
*Butyl acrylate	CEL, DBC, RH, UCC.
n-Butyl chlorocrotonate	MAL.
sec-Butyl chloroformate	PPG.
Butyl lactate	CPS.
Butyl maleate	TCH.
Butyl mercaptopropionate	EVN.
Butyl methacrylate	DUP, RH.
Butyl oleate	ELC.
tert-Butyl peroxyacetate	AZT, WTL.
*tert-Butyl peroxy-2-ethylhexanoate	AZT, WTC, WTL.
tert-Butyl peroxyisobutyrate	AZT, WTL.
tert-Butyl peroxyisopropylcarbonate	CAD, PPG, WTL.
tert-Butyl peroxyneodecanoate	WTC, WTL.
*tert-Butyl peroxypivalate	AZT, WTC, WTL.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Butyl stearate	CRM.
Cetyleicosyl methacrylate	RH.
Cetyl lactate	SBC, VND.
Diallyl maleate	AAC, FMC.
Dibutyl fumarate	RCI.
*Dibutyl maleate	MOD, RCI, USS.
Di(sec-butyl)peroxydicarbonate	WTL.
Diethyl carbonate (Ethyl carbonate)	PPG.
Diethyl dipropylmalonate	ABB.
Di(2-ethyl-1-hexyl) chloroformate	WTC.
Di(2-ethyl-1-hexyl) maleate	CCC, CHP, RPC, WPG.
Di(2-ethyl-1-hexyl) peroxydicarbonate	WTL.
Diethyl maleate	ACY.
Dilauryl-3,3'-thiodipropionata	CCW, EVN.
Dimethyl carbonate	PPG.
Dimethyl maleate	AAC, BLM.
Dimyristyl-3,3'-thiodipropionate	CCW.
Dioctyl maleate	RCI, USS.
Distearyl-3,3'-thiodipropionate	CCW, EVN.
Dithiobis(stearyl propionate)	EVN.
Ditridecyl maleate	EFH.
Di(tridecyl)-3,3'-thiodipropionate	EVN, SM.
Dodecylpentadecyl methacrylate	RH.
Dodecyl succinic lactate	SM.
*2-Ethoxyethyl acetate	EKT, EKX, ICI, UCC.
*Ethyl acetate (100% basis)	CEL, EKT, EKX, MON, UCC.
Ethyl acetoacetate	BRD, EKT.
*Ethyl acrylate	CEL, RH, UCC.
Ethyl chloroacetate	SF.
Ethyl chloroformate	ESA, PPG.
Ethyl chlorothiolformate	SFA.
Ethylene carbonate	TX.
2-Ethyl-1-hexyl acetate	EKT, MRF.
*2-Ethyl-1-hexyl acrylate	CEL, DBC, UCC.
2-Ethylhexyl chloroformate	PPG, VDM, WTC.
2-Ethyl-1-hexyl methacrylate	DUP.
Ethyl monofluoroacetate	RBC.
Ethyl phosphonothiodichloridate	TMA.
Ethyl silicate	SFS.
Ethyl sulfate (Diethyl sulfate)	UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*FATTY ACID ESTERS, NOT INCLUDED WITH PLASTICIZERS OR SURFACE ACTIVE AGENTS:	
Dimethyl brassylate	EMR.
Docosanyl docosenoate	SBC.
Dodecenyl succinic 12-hydroxystearate	TX.
Isocetyl stearate	SCP.
Isopropyl lanolinate	VND.
Isopropyl linoleate	VND.
Methyl esters of coconut oil	FTX, PG, WTC.
Methyl esters of lard	FER.
Methyl esters of tallow	CHL, FER.
Methyl 12-hydroxystearate	WTH.
Methyl iso-octadecenoate	SYL.
Methyl linoleate	HRT.
Methyl stearate	CHL.
*Myristyl myristate	CYL, SBC, VND.
Propyl oleate	CHP.
*Tridecyl stearate	DA, SCP, STC, WM, WTC.
Fatty acid esters, not included with plasticizers surface-active agents, all other	DA, SBC, WTC.
Hexyl acetate	ENJ.
Hexyl acrylate	CPS.
Isobutyl acrylate	DBC.
Isobutyl chloroformate	PPG.
Isobutyl isobutyrate	EKX.
Isobutyl methacrylate	RH.
Isodecyl acrylate	CPS.
Isodecyl methacrylate	CPS, RH.
Iso-octyl mercaptoacetate	CCW, EVN, MET.
Iso-octyl-3-mercaptopropionate	EVN.
Isopropyl acetate	EKT, UCC.
Isopropyl borate	ADC.
Isopropyl chloroformate	PPG.
Isostearyl neopentanoate	SBC, VND.
Lauryl acrylate	CPS.
Lauryl lactate	VND.
Lauryl methacrylate	AAC, CPS, RH, TX.
Laurylstearyl methacrylate	RH.
Maleic esters and copolymers	GAF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Menthallylidene diacetate	HDA.
2-Mercaptoethyl adipate	X.
2-Methoxyethyl acrylate	CPS.
Methyl acetate	EKT, MON.
Methyl acetoacetate	BRD, EKT.
Methyl acrylate, monomer	CEL.
Methyl borate	SFS.
Methyl butyrate	WCC.
Methyl chloroformate	ESX, PPG.
Methyl formate	CEL.
Methyl-3-mercaptopropionate	PLC.
*Methyl methacrylate, monomer	CYR, DUP, RH.
Methyl pivaloylacetate	EKT.
Methyl sulfate (Dimethyl sulfate)	DUP.
Myristyl lactate	VND.
Octadecyl-3-mercaptopropionate	DUP, EVN.
*PHOSPHORUS ACID ESTERS:	
Amyl hydrogen phosphate	HK.
Bis (2-Chloroethyl)-2-chloroethylphosphonate	SM.
Bis(2-ethylhexyl) hydrogen phosphate	SM.
Bis(2-ethylhexyl)hydrogen phosphite	SM.
Bis(2-ethylhexyl) pyrophosphoric acid	SM.
Bis(tridecyl) hydrogen phosphite	SM.
Butyl dithiophosphoric acid	ESX.
Butyl hydrogen phosphate	HK, SM.
Butyl xylyl acid phosphate	HK.
Dibutyl butylphosphonate	SM.
Dibutyl hydrogen phosphite	SFS, SM.
Dibutyl pyrophosphate	SM.
Diethyl hydrogen phosphite	SM.
Diethyl phosphorochloridothionate	SFS, TNA.
Dimethyl hydrogen phosphite	SM.
Dimethyl methylphosphonate	SM.
Dimethyl phosphoridothionate	SFS.
Dioleyl hydrogen phosphite	SM.
2-Ethylhexyl hydrogen phosphate	SM.
Iso-octyl hydrogen phosphate	SM.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*PHOSPHOROUS ACID ESTERS--CONTINUED	
Methyl dihydrogen phosphate	HK.
Mixed dialkyl hydrogen phosphates	ELC.
Mixed dialkyl hydrogen phosphates, amine salts	ELC.
Stearyl acid phosphate	HK.
Tetrakis(2-chloroethyl)ethylene diphosphate	OMC.
Trialkyl phosphite	MCB.
Tri(butoxyethyl)phosphate	SM.
Tributyl phosphate	FMC.
Triethyl phosphite	SFA, SM.
Triiso-octyl phosphite	MCB, SM.
Trimethyl phosphite	SM.
Tris(2-chloroethyl) phosphite	SM.
Tris(chloroisopropyl)thionophosphate	SM.
Tris-2-chloropropyl phosphate	PEL.
Tris(2-ethylhexyl) phosphite	ALD, MCP, SM.
Phosphorus acid esters, all other	HK, MCB, X.
*Propyl acetate	CEL, EKT, UCC.
Propylene carbonate	TX.
Stearyl methacrylate	CPS, RH, TX.
Tetraalkyl silicate	MON.
*Tetraethyl orthosilicate (Tetraethyl silicate)	KF, SFS, UCC.
Tetraethyl silicate, condensed	SFS, UCC.
Tetraoctyl orthosilicate	MON.
TITANIC ACID ESTERS:	
Bis(2-[bis(2-hydroxyethyl)amino]ethyl)diisopropyl titanate	DUP.
Di(hydroxy)bis(ammoniumlactato)titanium	DUP.
Diisopropyltitanate bis(ethyl-3-oxobutanoate)	DUP.
Tetrabutyl titanate	DUP.
Tetraisopropyl titanate	DUP.
Tetrakis(2-ethylhexyl)titanate	DUP.
Triethanolamine titanate	KF.
Titanic acid esters, all other	DUP, X.
Trichloromethyl chloroformate	MHI.
Triethyl borate	TSA.
Triethyl orthoformate	KF.
Triethyl orthopropionate	KF.
Triisobutyl vanadate	SFS.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Trimethyl borate	X.
Trimethyl orthoacetate	KF.
Trimethyl orthoformate	KF.
Tristearyl citrate	CYL.
*Vinyl acetate, monomer	CEL, DUP, UCC, USI.
Vinyl crotonate	FER.
Monohydric alcohol esters, all other	ALD, EKT, ENJ, ICI, PAH, PD, SNW, USR, X.
*POLYHYDRIC ALCOHOLS:	
2,2-Bis(bromomethyl)-1,3-propanediol	DOW.
1,2(and 1,3)-Butanediol	CEL.
*1,4-Butanediol	BAS, DUP, GAF, X.
2-Butene-1,4-diol	BAS, GAF.
2-Butyne-1,4-diol	BAS, GAF.
3-Chloro-1,2-propanediol (Glycerol -chlorohydrin)	DIX, EKT, EVN.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)	DBC, EKX.
*Ethylene glycol	BAS, CEL, DOW, EKX, HCF, ICF, ICI, NWP, OMC, PPG, SHC, TX, UCC.
2-Ethyl-1,3-hexanediol	UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane)	CEL.
Glycerol, synthetic only	DOW.
1,6-Hexanediol	DBC.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolethane)	IMC.
Mannitol	ICI.
3-Mercapto-1,2-propanediol (Thioglycerol)	EVN.
2-Methyl-2,4-pentanediol (Hexylene glycol)	SHC, UCC.
*Pentaerythritol	CEL, DOW, HPC, IMC, PST.
Propylene glycol (1,2-Propanediol)	ATR, DOW, DRC, OMC, TX, UCC.
*Sorbitol (70% by Weight)	BRD, EHC, ICI, PFZ.
Tetradecanediol-hexadecanediol mixture	SHC.
Trimethylolpropane	SVC.
2,2,4-Trimethyl-1,3-pentanediol	EKX.
Polyhydric alcohols, all other	ICI.
*ESTERS AND ETHERS OF POLYHYDRIC ALCOHOLS:	
*POLYHYDRIC ALCOHOL ESTERS:	
2-(2-Butoxyethoxy)ethyl acetate	EKT, ICI, UCC.
2-Butoxyethyl acetate	EKT, ICI.
1,3-Butylene glycol diborate	USB.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTER AND ETHERS OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ESTERS--CONTINUED	
1,3-Butylene glycol diborate/hexylene glycol boric anhydride	USB.
Diethylene glycol adipate	CMB, DIX.
Diethylene glycol, borated	OMC.
Diethylene glycol chloroformate	PPG.
Diethylene glycol dimethacrylate	CPS, RH.
Dihydromyrcene	SCM, X.
2-(2-Ethoxyethoxy)ethyl acetate	AAC, EKT, MRT.
Ethylene glycol diacetate	EKT.
Ethylene glycol dimercaptoacetate	EVN.
Ethylene glycol dimethacrylate	RH.
Ethylene glycol hydroxyacetate	CCA.
Ethylene glycol phosphite	SM.
2-Ethyl-2(hydroxymethyl)-1,3-propanediol trimethacrylate	WM.
Glycerol tricaprylate caprate	WM.
Glyceryl diacetate (Diacetin)	HAL.
Glyceryl monoacetate (Monoacetin)	HAL.
Glyceryl monothioglycolate	EVN.
Glyceryl triacetate (Triacetin)	EKT.
1,6-Hexanediol diacrylate	CEL, RH.
Hydroxyethyl acrylate	DOW, RH.
Hydroxyethyl methacrylate	RH.
Hydroxypropyl acrylate	DOW, RH.
Hydroxypropyl methacrylate	AAC, GAI, RH.
2-Methoxyethyl acetate	UCC.
Pentaerythritol caprylate/caprate	WM.
Pentaerythritol stearate	GLY.
Pentaerythritol tetraacrylate	CEL.
Pentaerythritol tetrakis (3-Mercaptopropionate)	EVN.
Polyethylene polypropylene glycol glyceryl triether maleate	BAK.
Polypropylene-polyethylene glycol glyceryl triether citrate	BAK.
Propylene glycol dicaprylatecaprate	WM.
Propylene oxide, polymer with polyethylene glycol adipate	BAK.
Sucrose octa-acetate	HFT, PD.
Tetraethylene glycol diacrylate	CEL.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTER AND ETHERS OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ESTERS--CONTINUED	
Tetraethylene glycol diheptanoate	WM.
Tetraethylene glycol dimethacrylate	AAC.
Triethylene glycol diacetate	EKT.
Triethylene glycol dimethacrylate	RH.
Trimethylolethane pelargonate	WM.
Trimethylolpropane-hexyl dimerate	WTC.
Trimethylolpropane triacrylate	CEL, RH.
Trimethylolpropane tridecanoate	SM.
Trimethylolpropane tri(2-mercaptopropionate)	EVN, RH.
Trimethylolpropane trimethacrylate	MRT.
2,2,3-Trimethyl-1,3-pentanediol monoisobutyrate	EKX.
Tripropylene glycol diacrylate	CEL.
Polyhydric alcohol esters, all other	ARA, CEL, DOW, EKX, SNW, UCC.
*POLYHYDRIC ALCOHOL ETHERS:	
Bis(2-butoxyethyl)ether (Diethylene glycol di-n-butyl ether)	ASL, FER.
Bis(2-ethoxyethyl)ether (Diethylene glycol diethyl ether)	ASL, FER.
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether)	ASL.
Bis(2-methoxyethyl)ether (Diethylene glycol dimethyl ether)	ASL, FER.
*2-Butoxyethanol (Ethylene glycol monobutyl ether)	DOW, EKX, ICI, OMC, SHC, UCC.
*2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	DOW, EKX, ICI, OMC, SHC, UCC.
*2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)	DOW, OMC, UCC.
1-Butoxyethoxy-2-propanol	UCC.
Butyl ethers of tetra- and higher ethylene glycols(high boiling)	EKX, ICI.
*Diethylene glycol	BAS, CEL, DOW, EKX, HST, ICI, NWP, OMC, PPG, SHC, TX, UCC.
Diethylene glycol divinyl ether	GAF.
Dimethoxyethane (Ethylene glycol dimethyl ether)	ASL, FER.
*Dipropylene glycol	ATR, DOW, OMC, TX, UCC.
Dipropylene glycol monomethyl ether	OMC.
*2-Ethoxyethanol (Ethylene glycol monoethyl ether)	EKX, ICI, OMC, SHC, UCC.
*2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	DOW, EKX, ICI, OMC, SHC, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTER AND ETHER OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
*2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	DOW, OMC, UCC.
Ethylene glycol di-tributyl ether	EKX, OMC.
Ethylene glycol monoisobutyl ether	OMC.
Ethyl ethers of tetra- and higher ethylene glycols(high boiling)	EKX, ICI.
2-[2-(Hexyloxy)ethoxy]ethanol	OMC, UCC.
1-Isobutoxy-2-propanol (Propylene glycol isobutyl ether)	MCW.
2-Methoxyethanol (Ethylene glycol monomethyl ether)	ICI, OMC, PPG, TX, UCC.
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)	DOW, ICI, OMC, PPG, TX, UCC.
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether)	ASL, DOW, ICI, OMC, UCC.
2-(2-Methoxyethoxy)ethyl-2-methoxyethyl ether (Triethylene glycol dimethyl ether)	FER, OMC.
Methoxypolyethylene glycol	ICI, UCC.
1-Methoxy-2-propanol	DOW, OMC.
3-(3-Methoxypropoxy)propanol	DOW.
3-3-(3-Methoxypropoxy)propoxypropanol	DOW.
Paraformaldehyde	CEL.
Polyethoxylated-1,4-butanediol	X.
*Polyethylene glycol	ABB, DA, DOW, HDG, ICI, OMC, STC, TX, UCC, X.
Polyethylene glycol dimethyl ether	SHX, X.
Polyethylene glycol mono decyl ether	BAK.
*Polyglycols, ethylene glycol and glycol ether, mixed	ASL, CEL, DIX, DOW, UCC, X.
Polymethylvinyl ether monoethylmaleate	TWI.
Polyoxyalkylene glycol	OMC.
*POLYPROPOXY ETHERS:	
Poly(propoxy)butyle ether, ethoxylated	TX.
Polypropoxybutyl ether	DA.
Polypropoxy ethers, all other	ICI, UCC.
Polyoxypropylene polyoxyethylene glycol, mixed	UCC, WTC.
*Polypropylene glycol	DOW, HDG, OMC, SM, TX, X.
Polypropylene glycol glycerol tri-ether	BAK.
Polytetramethylene glycol ether	DUP, QKO.
Propoxyethanol (Ethylene glycol monopropyl ether)	EKX.
Propoxyethoxyethanol (Diethylene glycol monopropyl ether)	EKX.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTER AND ETHER OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
Propylene glycol, mixed ethers	CXI, UCC.
Sorbitol, ethoxylated	GLY, ICI.
Sorbitol, propoxylated	ICI.
*Tetraethylene glycol	DOW, EKX, ICI, UCC.
2,2'-Thiodiethanol (Thiodiglycol)	DOW, MET(E), PLC, X.
Thiodipropanol	X.
*Triethylene glycol	CEL, CXI, DOW, EKX, ICI, OMC, PPG, SHC, TX, UCC.
Triethylene glycol dichloride	RH.
Tripropylene glycol	DOW, OMC, UCC.
Tripropylene glycol monomethyl ether	OMC.
Tri- and tetraethylene glycol monoethyl ethers, borate esters	OMC.
Polyhydric alcohol ethers, all other	ALD, DA, MIL, UCC, WTC, X.
*HALOGENATED HYDROCARBONS:	
BROMINATED (INCLUDING BROMOCHLORINATED) HYROCARBONS:	
1-Bromobutane (n-Butyl bromide)	DAZ.
Bromochlorinated paraffin $C_{10}C_{20}$	FER.
Bromochloromethane	BKM, DOW.
Bromoethane (Ethyl bromide)	DOW, GTL.
1-Bromohexadecane	HMY.
1-Bromo-3-methyl-2-butene	SD.
1-Bromo-octadecane	HMY.
1-Bromopentane (n-Amyl bromide)	GTL.
1-Bromopropane (n-Propyl bromide)	DAZ, WCC.
2-Bromopropane (Isopropyl bromide)	DAZ.
Dibromohexadecane	TNA.
Dibromomethane (methylene bromide)	DOW.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	DOW.
Vinyl bromide (Bromoethylene)	TNA.
Brominated (Including bromochlorinated) hydrocarbons, all other	ALD, TNA, WTC.
*CHLORINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
*Carbon tetrachloride	DA, DOW, DUP, FRO, LCP, SFI.
CHLORINATED PARAFFINS (C_{10}-C_{30}):	
*Chlorinated paraffins, 35-64% chlorine	DA, DVC, FER, NEV, WTC, X.
Chlorinated paraffins, less than 35% chlorine	FER, NEV.
*Chlorinated paraffins, 65% or more chlorine	DA, DVC, FER, NEV.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HALOGENATED HYDROCARBONS--CONTINUED	
*CHLORINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS--CONTINUED	
1-Chlorobutane (n-Butyl chloride)	UCC.
*Chloroform	DA, DOW, FRO, LCP.
*Chloromethane (Methyl chloride)	DA, DCC, DOW, LCP, TNA, VST.
3-Chloro-2-methyl-1-propene (Methallyl chloride)	FMC.
3-Chloropropene (Allyl chloride)	DOW, SHC.
1,2-Dichloropropane (Propylene dichloride)	DOW.
2,3-Dichloropropene	DOW.
2,2-Dimethylchloropropane(neopentyl chloride)	TNA.
*Ethyl chloride (Chloroethane)	DOW, DUP, PPG, TNA.
*Ethylene dichloride	ATR, BFG, DA, DOW, FOR, FRO, GP, OMC, PPG, SHC, TNA, VST.
Hexyl chloride	TNA.
Lauryl chlorides	SHC, TNA.
*Methylene chloride (Dichloromethane)	DA, DOW, FRO, LCP.
Octyl chloride	TNA.
*Perchloroethylene (Tetrachloroethane)	DA, DOW, DUP, FRO, PPG.
*1,1,1-Trichloroethane (Methyl chloroform)	DOW, FRO, PPG.
1,1,2-Trichloroethane (Vinyl trichloride)	DOW.
Trichloroethylene	DOW, PPG.
1,2,3-Trichloropropane	DOW.
1,2,3-Trichloropropene	DOW.
*Vinyl chloride, monomer (Chloroethylene)	BFG, BOR, DOW, ENJ, FOR, GP, PPG, SHC, VST.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOW, PPG.
Chlorinated (Not otherwise halogenated) hydrocarbons, all other	ALD, X.
FLUORINATED (INCLUDING OTHER FLUOROHALOGENATED) HYDROCARBONS:	
2-Bromo-2-chloro-1,1,1-trifluoroethane	HOC.
Bromotrifluoroethylene	HOC.
Bromotrifluoromethane	DUP, GTL.
1-Chloro-1,1-difluoroethane	PAS.
*Chlorodifluoromethane (F-22)	ACS, DUP, KAI, PAS, RCN.
Chloropentafluoroethane	DUP.
Chlorotrifluoroethylene (Trifluorovinyl chloride)	ACS.
Chlorotrifluoromethane	DUP.
*Dichlorodifluoromethane (F-12)	ACS, DUP, KAI, PAS, RCN.
Dichlorotetrafluoroethane	ACS, DUP.
1,1-Difluoroethane	DUP, PAS.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HALOGENATED HYDROCARBONS--CONTINUED	
*FLUORINATED (INCLUDING OTHER FLUORAHALOGENATED) HYDROCARBONS--CONTINUED	
Hexafluoroethane	DUP.
Hexafluoropropylene, monomer	DUP.
1-Iodoperfluorohexane	DUP.
Polyhexafluoropropylene oxide	DUP.
Polytetrafluoroethylene ethyl iodide	DUP.
Tetrafluoroethylene, monomer	DUP, ICI.
Tetrafluoromethane	DUP.
*Trichlorofluoromethane (F-11)	ACS, DUP, KAI, PAS, RCN.
Trichlorotrifluoroethane	ACS, DUP, PAS.
Trifluoroethanol	HOC.
Trifluoromethane	DUP.
Trifluoropropene	HOC.
Vinyl fluoride, monomer	DUP.
Vinylidene fluoride, monomer	PAS.
Fluorinated (Including other fluorohalogenated) hydrocarbons, all other	DAZ, DUP, ICI, OH.
IODINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
Diiodomethane (Methylene iodide)	DPW, NTB.
Iodobutane	RSA.
Iodoethane (Ethyl iodide), non-medical	COC, DPW, RSA.
Iodomethane (Methyl iodide)	COC, DPW, RSA.
Isopropyl iodide	RSA.
Iodinated (Not otherwise halogenated) hydrocarbons, all other	ALD, DPW.
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS:	
Acetone sodium bisulfite	EK.
ACETYLACETONE (ACAC) COMPLEXES:	
Chromium acetylacetonate complex	MCK, SHP.
Cobalt acetylacetonate complex	SHP.
Iron acetylacetonate complex	MCK, SHP.
Manganese acetylacetonate complex	SHP.
Nickel acetylacetonate complex	SHP.
ACYCLIC PEROXIDES:	
Acetylacetone peroxide	CAD.
Acetyl peroxide	UCC, WTL.
2,2-Bis[t-butyl peroxy]butane	WTL.
*2-Butanone peroxide	CAD, FRE, NOC, WTC, WTL.

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TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYLIC CHEMICALS--CONTINUED	
ACYCLIC PEROXIDES--CONTINUED	
n-Butyl-4,4-bis[t-butylperoxy]valerate	CAD.
tert-Butyl hydroperoxide	ATR, FRE, WTC, WTL.
tert-Butyl peroxide (Di-tert-butyl peroxide)	CAD, WTC, WTL.
Decanoyl peroxide	WTC, WTL.
2,5-Dimethyl-2,5-bis(2-ethyl-1-hexanoyl peroxy) hexane	WTC, WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	CAD, WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3	WTL.
Diperoxydodecanedioic acid	MMC.
Di-n-propyl peroxydicardonate	WTL.
Aluminum isopropoxide (Aluminum isopropylate)	CHT, KCH.
*Carbon disulfide	PAS, PPG, SFI.
2,3-Dibromopropanol	GTL.
Diethyl-N,N-Bis(2-hydroxyethyl)amino methyl phosphinate	SFS.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	EKX, PPG.
*EPOXIDES, ETHERS, AND ACETALS:	
Bis(2-Chloroethyl)ether (Dichlorodiethyl ether)	BKM.
Butylene oxide	DOW.
Butyl vinyl ether	GAF.
2,2-Dichloro-1,1-difluoroethyl methyl ether	DOW.
Epichlorohydrin	DOW, SHC.
*Ethylene oxide	BAS, CEL, DOW, EKX, ICI, NWP, OMC, PPG, SHC, SNO, TX, UCC.
Ethyl ether, U.S.P.	USI.
Ethyl ether, absolute	EKX, USI.
Ethyl ether, tech.	DOW, USI.
1,2-Ethanedithiol	RBC.
2-(Ethylmercapto)ethanol	DOM.
*GLYCIDYL ETHERS:	
Alkyl glycidyl ethers, C_{12}-C_{14}	WLN.
Alkyl glycidyl ethers, C_8-C_{10}	WLN.
Allyl glycidyl ether (Allyloxy-2,3-epoxypropane)	AAC, BLM, CPS.
1,4-Butanediol diglycidyl ether	WLN.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	CPS, WLN.
tert-Butyl glycidyl ester	AAC.
2-Ethylhexyl glycidyl ether	WLN.
Polyol glycidyl ether	WLN.
Glycidyl ethers, all other	WLN.
Ethyl vinyl ether	GAF.
Glycidol (2,3-Epoxy-1-propanol)	DIX.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANIOUS ACYCLIC CHEMICALS--CONTINUED	
EPOXIDES, ETHERS, AND ACETALS--CONTINUED	
*GLYCIDYL ETHERS--CONTINUED	
Isopropyl ether	ENJ, SHC.
Malonaldehyde bis(dimethyl) acetal	KF.
Methylal (Dimethoxymethane)	CEL.
Methyl ether (Dimethyl ether)	AIP, DUP.
Methyl vinyl ether	GAF, UCC.
Propylene oxide	ATR, DOW.
Epoxides, ethers, acetals, all other	STC, UCC, VIK.
FATS AND OILS, CHEMICALLY MODIFIED:	
Hydrogenated menhaden fish oil	CHL.
Hydrogenated tallow glycerides	CHL, SHX.
Linseed oil, oxygenated	CJO.
Stearic acid glycerides and oxidized stearic acid glycerides	SDW.
Sulfurized corn oil	SM.
Vegetable glycerides, hydrogenated	GLY.
Fats and oils, chemically modified, all other	DA.
Glutaraldehyde bis(sodium bisulfite)	EK.
Hexachlorodimethyl sulfone	SFS.
1-Hexadecanethiol	HMY.
Lauroyl peroxide	WTL.
2-Mercaptoethanol	MET, PLC.
Methyl sulfide (Dimethyl sulfide)	CRZ, PAS.
Methyl sulfoxide (Dimethyl sulfoxide)	CRZ.
1-Octadecanethiol	HMY.
*HYDROCARBONS:	
n-Decane	HMY, PLC.
3,3-Dimethylbutene	PLC.
n-Dodecane	HMY, PLC.
Hexadecane	HMY.
Isononanoyl peroxide	WTL.
Myrcene	SCM, X.
n-Nonane	HMY, PLC.
n-Octadecane	HMY.
n-Octane	HMY, PLC.
n-Tetradecane	HMY.
Hydrocarbons, all other	ALD, WTK.
ORGANO-ALUMINUM COMPOUNDS:	
Aluminum acetylacetonate complex	MCK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-ALUMINUM COMPOUNDS--CONTINUED	
Aluminum di-sec-butoxide acetoacetic ester chelate	CHT.
Aluminum diisopropoxide acetoacetic ester chelate	CHT, KCH.
Aluminum ethyl-3-oxobutanoato-O^1,O^3-dihydroxy T-4	CHT.
Aluminum (2-ethyl hexanoato)-oxo-homopolymer	KCH.
Aluminum tri-sec-butoxide	CHT.
Diethylaluminum chloride	TNA, TSA.
Diethyl aluminum ethoxide	TSA.
Diethylaluminum iodide	TNA, TSA.
Diisobutylaluminum chloride	TNA, TSA.
Diisobutylaluminum hydride	TNA, TSA.
Ethylaluminum dichloride	TNA, TSA.
Ethylaluminum sesquichloride	TNA, TSA.
Isopropenylaluminum	TSA, X.
Methylaluminum sesquichloride	TNA.
Oxy-aluminum octanoate	CHT.
Sodium dihydrobis(2-methoxyethoxy)aluminum hydride	HXL, TNA.
Triethylaluminum	TNA, TSA.
Tri-n-hexyl aluminum	TNA, TSA.
Triisobutylaluminum	TNA, TSA.
Trimethylaluminum	MHI.
Tri-n-octylaluminum	TSA.
Tri-oxyaluminum tri-isopropoxide	CHT, KCH.
Organo-aluminum compounds, all other	ALD, TNA.
*ORGANO-BORON COMPOUNDS:	
Boron fluoride - ethyl ether complex	ACS.
Ethylamine with borane (1:1)	ACS.
1-Hexyl-1,2-dicarbadodecaborane	X.
N-Methyl-methanamine with borane (1:1)	X.
2-Methyl-2-propanamine with borane(1:1)	X.
Triethylborane	X.
Trimethoxyboroxine	X.
N,N,N-Trimethyl methanaminium octahydrotriborate	X.
Organo-boron compounds, all other	MHI, TKL, X.
ORGANO-LITHIUM COMPOUNDS	
n-Butyllithium	FTE.
sec-Butyllithium	FTE.
Organo-lithium compounds, all other	ALD.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-MAGNESIUM COMPOUNDS:	
Butyl ethyl magnesium	TSA.
Di-n-hexyl magnesium	TNA.
Methylmagnesium bromide	ARA.
Methylmagnesium chloride	ARA.
Organo-magnesium compounds, all other	ARA.
ORGANO-SILICON COMPOUNDS:	
γ-Aminopropyltriethoxysilane	KF, SCM.
α-Chloropropyltrichlorosilane	DCC.
Chloropropyltrimethoxysilane	DCC, KF.
Chlorotrimethylsilane	DCC.
Dichlorodimethylsilane	DCC.
Dichloromethylsilane	DCC.
Dichloromethylvinylsilane	DCC, UCC.
Diethoxyphosphorylethyltriethoxysilane	UCC.
α-Glycidoxypropyltrimethoxysilane	DCC, UCC.
Hexamethyldisilazane	SCM.
Isobutyltrimethoxysilane	KF.
Mercaptopropyltrimethoxysilane	KF.
α-Methacryloxypropyltrimethoxysilane	UCC.
Methyltrimethoxysilane and polymethyltrisiloxane	DCC, KF, UCC.
Polyoxyalkene silicones	UCC.
*Silicone fluids	DCC, MON, SPD, SWS, UCC.
Trichloromethylsilane	DCC.
Trichloropropylsilane	DCC.
Trichlorovinylsilane	UCC.
Tris(2-methoxyethoxy)vinyl silane	KF.
Vinyltriethoxysilane	UCC.
Organo-silicone compounds, all other	ALD, DA, KF, UCC, X.
ORGANO-TIN COMPOUNDS:	
Dibutyltin bis(butylmaleate)	CCA.
Dibutyltin bis(isooctylmercaptoacetate)	FER, X.
Dibutyltin bis(mercaptolaurate)	X.
Dibutyltin methoxide (Dibutylmethoxytin)	CCA.
Dibutyltin oxide	X.
Dimethyltin dichloride	WTC.
Ester tin mercaptoesters	CCA.
Octyltin	CCA, X.
Titanium acetylacetonate complex	KF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-TIN COMPOUNDS--CONTINUED	
Tributyltin acetate	X.
Tributyltin fluoride	X.
Tributyltin propylene glycol maleate	CCA.
Organo-tin compounds, all other	CCW, COS.
ORGANO-ZINC COMPOUNDS:	
Diethylzinc	MHI, TSA.
Zinc acetylacetonate complex	SHP.
Perchloromethanethiol (Perchloromethyl mercaptan)	SFC.
Perfluoroalkyl polyether	X.
*Phosgene (Carbonyl chloride)	DUP, MOB, OMC, PPG, RUC, UCC, UPJ, VDM.
Potassium 2-methyl-2-butanol	X.
Potassium 2-methyl-2-propanol	X.
Sodium ethoxide	RBC.
Sodium methoxide (Sodium methylate)	DA, OMC, RBC.
Succinyl peroxide	WTL.
Trimethylsulfonium iodide	DPW.
Miscellaneous acylic chemicals, all other	ALD, CPS, NOD, PD, PLC, SHP, WTL, X.
*MIXTURES NOT SPECIFICALLY ITEMIZED:	
C_{12}-C_{15} Alcohol lactates	VND.
Alcohols, monohydric, and their esters, C_8 and higher, mixed	EKX, MON, X.
Butanol residue stream	CEL.
Butyl formcel	CEL.
Celtone	CEL.
Fatty acid amide mixtures	HAL.
*Glycol residues	CXI, ICI, OMC.
Methacrylate based cationic polyelectrolytes	COS.
Methyl formcel	CEL.
Mixed alcohol borates	X.
Mixed chain length fatty acid, synthetic	ENJ, PG.
Morpholine residue stream	TX.
Oxidate light ends	HCF.
Polyethylene slip agents	DRC.
Polymethacrylic acid esters	ABB, DUP.
Silicone resins for mold release agents	CNI.
Mixtures of miscellaneous acyclic chemicals not specifically itemized, all other	DIX, MCB, UCC.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1984

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of miscellaneous cyclic and acyclic chemicals to the U.S. International Trade Commission for 1984 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY
AAC	Alcolac, Inc.
ABB	Abbott Laboratories
ACS	Allied Corp., Chemical Sector
ACY	American Cyanamid Co.
ADC	Anderson Development Co.
AGC	Alberta Gas Chemicals, Inc.
AIP	Air Products & Chemicals, Inc.
ALB	Ames Laboratories, Inc.
ALD	Aldrich Chemical Co., Inc.
ALI	Associated Lead, Inc.
ALM	Allemania Chemical Co.
AMB	American Bio-Synthetics Corp.
AMO	Standard Oil Co. (Indiana)
ANG	Angus Chemical Co.
ARA	Syntex Chemicals, Inc.
ARC	Azko Chemie America, Armak Chemicals
ARS	Arsynco, Inc.
ARZ	Arizona Chemical Co.
ASH	Ashland Oil, Inc.
ASL	Specialty Chemical Products Corp.
ATL	Atlantic Industries, Inc.
ATR	Atlantic Richfield Co., Arco Chemical Co.
AZT	Catalyst Resources, Inc.
BAK	Baker International - Magna Corp.
BAS	BASF Wyandotte Corp.
BCC	Buffalo Color Corp.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group
BKC	J. T. Baker Chemical Co.
BKM	Buckman Laboratories, Inc.
BLM	Balchem Corp., Arc Chemical Div.
BLY	Berkley & Co., Inc.
BOC	Biocraft Laboratories, Inc.
BOR	Borden Inc., Borden Chemical Div.
BRD	Lonza, Inc.
CAD	Arzo Chemie America, Noury Chemicals
CAS	Caschem, Inc.
CBD	Chembond Corp.
CCA	Interstab Chemicals, Inc.
CCC	C.N.C. Chemical Corp.
CCW	Morton-Thiokol, Inc., Carstab Div.
CEL	Celanese Corp.:
	Celanese Chemical Co., Inc.
	Celanese Fibers Operations
	Celanese Specialty Resins
CGY	Ciba-Geigy Corp.
CHG	Mobay Chemical Corp., Agricultural Chemicals Div.
CHL	Chemol, Inc.
CHR	C. H. Patrick & Co., Inc.
CHT	Chattem, Inc.
CJO	C. J. Osborn Chemicals, Inc.
CLK	Clark Oil & Refining Corp.
CMB	Cambridge Industries Co.
CMI	Conap. Inc.
CMP	Mipro. Inc.
COC	Columbia Organic Chemicals Co., Inc.
COS	Cosan Chemical Corp.
CPS	CPS Chemical Co., Inc.
CRN	CPC International, Inc., Amerchol Corp.
CRZ	Crown Zellerbach Corp., Chemical Products Div.
CXI	Chemical Exchange Industries, Inc.
CYL	Cyclo Chemical Corp.
CYR	CYRO Industries

CODE	NAME OF COMPANY
DA	Diamond Shamrock Corp., Chemicals Co.
DAZ	Diaz Chemical Corp.
DBC	Badische Corp.
DCC	Dow Corning Corp.
DIX	Dixie Chemical Co., Inc.
DKA	Denka Chemical Corp.
DOM	Dominion Products, Inc.
DOW	Dow Chemical Co.
DPW	Deepwater, Inc.
DRC	Dock Resins Corp.
DRL	Darling & Co.
DUP	E. I. duPont de Nemours & Co., Inc.
DVC	Dover Chemical Corp. Sub. of ICC Industries, Inc.
EFH	E. F. Houghton & Co.
EHC	Ethichem Corp.
EK	Eastman Kodak Co.:
EKT	Tennessee Eastman Co. Div.
EKX	Texas Eastman Co. Div.
ELC	Elco Corp. Sub of Detrex Chemical Industries, Inc.
EMR	Emery Industries Div. of National Distillers & Chemical Corp.
ENJ	Exxon Chemical Americas
ESA	East Shore Chemical Co.
ESX	Essex Chemical Corp., Essex Industrial Chemicals, Inc.
EVN	W. R. Grace & Co., Organic Chemicals Div., Evans Chemetics
FER	Ferro Corp.:
	Ferro Chemical Div.
	Grant Chemical Div.
	Keil Chemical Div.
FKE	Frank Enterprises, Inc.
FMC	FMC Corp.:
FMB	Specialty Chemicals Group
FMT	Fairmount Chemical Co., Inc.
FOC	Handschy Industries, Inc., Farac Varnishes Chemicals
FOR	Formosa Plastics Corporation Louisiana
FRE	Freeman Chemical Corp.
FRO	Vulcan Materials Co., Chemicals Div.
FTE	Foote Mineral Co.
FTX	Finetex, Inc.
GAF	GAF Corp., Chemical Group
GAI	Glasurit America, Inc.
GAN	Gane's Chemicals, Inc.
GE	General Electric Co.
GIV	Givaudan Corp.
GLY	Glyco, Inc.
GP	Georgia-Pacific Corp.:
	Plaquemine Div.
	Resins Operations
GTL	Great Lakes Chemical Corp.
GYR	Goodyear Tire & Rubber Co.
HAL	C. P. Hall Co.
HCC	Hatco Chemical Corp.
HCF	Hercofina
HCP	Honig Chemical & Processing Corp.
HDC	Hodag Chemical Corp.
HEX	Hexagon Laboratories, Inc.
HFT	Syntex Agribusiness, Inc.
HK	Occidental Chemical Corp., Industrial & Specialty Chemical Div.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1984--CONTINUED

CODE	NAME OF COMPANY
HLI	Witco Chemical Corp.
HML	Hummel Chemical Co.
HMP	W. R. Grace & Co., Hampshire Chemicals Div.
HMY	Humphrey Chemical Co.
HOC	Halocarbon Products Corp.
HPC	Hercules, Inc.
HRT	Hart Products Corp.
HST	American Hoechst Corp., Hoechst Fiber Industries Div.
HXL	Hexcel Corp., Hexcel Chemical Products
ICI	ICI Americas, Inc., Chemicals Div.
ICF	Inmont Corp.
IMC	International Minerals & Chemicals Corp., Industries Chemicals Div.
IOC	Sybron Chemical, Inc.
JRC	Jarchem Industries, Inc.
KAI	Kaiser Aluminum & Chemical Corp.
KCH	Joseph Ayers, Inc.
KF	Kay-Fries, Inc., Chemical Div., Dynamit Nobel of America, Inc.
KLM	Kalama Chemical, Inc.
KPT	Koppers Co., Inc.
LAK	Bofors Nobel, Inc.
LCP	LCP Chemicals - West Virginia, Inc.
LEM	Napp Chemicals, Inc.
LIL	Eli Lilly & Co.
LMI	North American Chemical Co.
MAL	Mallinckrodt, Inc.
MCB	Borg-Warner Corp., Borg-Warner Chemicals
MCI	Mooney Chemicals, Inc.
MCK	MacKenzie Chemical Works, Inc.
MET	M & T Chemicals, Inc.
MHI	Morton-Thiokol, Inc., Ventron Div.
MIL	Milliken & Co., Milliken Chemical Co.
MLS	Miles Laboratories, Inc., Biotechnology Group
MMC	EM Industries, Inc., EM Science Div.
MOB	Mobay Chemical Corp., Pittsburgh Div.
MON	Monsanto Co.
MRF	Morflex Corp.
MRK	Merck & Co., Inc.
MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
NCC	Niacet Corp.
NCI	Union Camp Corp., Terpene & Aromatics Div.
NES	Ruetgers-Nease Chemical Co.
NOC	Norac Co., Inc.: Mathe Div.
NOD	Nuodex, Inc.
NSC	National Starch & Chemical Corp.
NTB	National Biochemical Co.
NWP	Northern Petrochemicals Co.
OH	Anaquest
OMC	Olin Corp.
ORT	Roehr Chemicals, Inc.
PAC	Pacific Anchor Chemical Corp.
PAH	Parish Chemical Co.
PAS	Parke-Davis, Div. of Warner-Lambert Co.
PEL	Pelron Corp.
PEN	CPC International, Inc., Penick Corp.
PFN	Pfanstiehl Laboratories, Inc.
PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.
PIC	Pierce Chemical Co.
PKI	Perkins Industries, Inc.
PLC	Phillips Petroleum Co.
PLS	Plastics Engineering Co.
PMP	PMP Fermentation Products, Inc.
PPG	PPG Industries, Inc.
PST	Perstorp Polyols, Inc.
QKO	QO Chemicals, Inc.
RBC	Fike Chemicals, Inc.
RCI	Reichhold Chemicals, Inc.
RCN	Racon, Inc.
RDA	Rhone-Poulenc, Inc.
REG	Regis Chemical Co.
REM	Remington Arms Co., Inc.
RH	Rohm & Haas Co.
RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.
RSA	R.S.A. Corp.
RUG	Rubicon, Inc.
SBC	Scher Chemicals, Inc.
SCM	SCM Corp.: Organic Chemicals Div. PCR, Inc.
SCP	Henkel Corp.
SD	Sterling Drug, Inc.: Sterling Pharmaceuticals, Inc.
SDC	Sandoz Chemicals Corp.
	Sterling Drug, Inc.:
SDH	Hilton Davis Chemical Co. Div.
SDW	Sterling Organics
	Stauffer Chemical Co.:
SFA	Agricultural Div.
SFC	Calhio Chemicals, Inc.
SFI	Chlor Alkali Products
SFS	Specialty & Intermediates Chemical Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SHP	Shepherd Chemical Co.
SHX	Sherex Chemical Co., Inc.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
SKO	Texaco Refining & Marketing Co.
SM	Mobil Oil Corp.: Mobil Chemical Co. Chemical Coatings Div.
SNO	SunOlin Chemical Co.
SNW	Sun Chemical Corp., Chemicals Div.
SOC	Chevron Corp., Chevron Chemical Co.
SOH	Sohio Chemical Co.
SOL	Southland Corp., Fine Chemical Div.
SPD	General Electric Co., Silicone Products Dept.
STC	American Hoechst Corp., Sou-Tex Works
SVC	Capital City Product Co., Armstrong Chemical Plant
SW	Sherwin-Williams Co.
SWS	Stauffer Chemical Co., SWS Silicones Div.
SYL	Sylvachem Corp.
SYP	Plastic Specialties & Technology, Inc., Synthetic Products Co. Div.
TCC	Sybron Chemical, Inc.
TCH	Emery Industries, Inc., Trylon Div.
TID	Texaco Refining & Marketing, Inc., Delaware Refinery
TLC	Twin Lake Chemical, Inc.
TNA	Ethyl Corp.
TNI	The Gillette Co., Chemical Div.
TRO	Troy Chemical Corp.
TSA	Texas Alkyls, Inc.
TU	Tenn-USS Chemical Co.

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TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1984--CONTINUED

CODE	NAME OF COMPANY
TX	Texaco, Inc., Texaco Chemical Co.
TZC	Magnesium Elektron, Inc.
UCC	Union Carbide Corp.
UPJ	Upjohn Co. and Polymer Chemical Div.
USB	U. S. Borax & Chemcial Corp., U.S. Borax Research Corp.
USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.
USR	Uniroyal, Inc., Chemical Group
USS	U.S. Steel Corp., USS Chemicals Div.
VAL	United Merchants & Manufactures, Inc., Valchem Div.
VDM	Van De Mark Chemical Co., Inc.
VEL	Velsicol Chemical Corp.
VGC	Virginia Chemicals, Inc.
VIK	Viking Chemical Co.
VNC	Vanderbilt Chemical Corp.
VND	Van Dyk, Div. of Mallinckrodt, Inc.
VST	Vista Chemical Co.
VTC	Vertac Chemical Corp.
WAG	West Design Chemical, Inc.
WCC	White Chemical Corp.
WCL	Wright Chemical Corp.
WLN	Wilmington Chemical Corp.
WM	Inolex Chemicals Div.
WPG	West Point-Pepperell, Inc., Grifftex Chemical Co. Sub.
WTC	Witco Chemical Corp.
WTH	Union Camp Corp.
WTK	Whittaker Corp., Heico Chemicals Div.
WTL	Pennwalt Corp., Lucidol Div.
WVA	Westvaco Corp., Chemicals Div.
WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.

Note.--Complete names, telephone number, and addresses of the above reporting companies are listed in table 1 of the appendix.

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APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984

[Names of synthetic organic chemicals manufacturers that reported production and/or sales to the U.S. International Trade Commission for 1984 are listed below alphabetically, together with their identification codes as used in table 2 of the 15 individual sections of this report]

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
AEP	A & E Plastic Corp	818-968-3801	14505 Proctor Ave., P. O. Box 1268, Industry, CA 91749.
AZS	AZS Corp	404-873-1850	762 Marietta Blvd., N.W., Atlanta, GA 30318.
	AZS Chemical Corp	404-873-1851	762 Marietta Blvd., N.W., Atlanta, GA 30318.
ABB	Abbott Laboratories	312-937-6723	14th St. & Sheridan Rd., N. Chicago, IL 60064.
ABS	Abex Corp., Friction Products Div.-U.S.	703-662-3871	P. O. Box 3250, Winchester, VA 22601.
ACO	Adco Chemical Co	201-589-0880	49-129 Rutherford St., Newark, NJ 07105.
WLC	Agrico Chemical Co	918-588-2000	One William Center, Tulsa, OK 74172.
AIP	Air Products & Chemicals, Inc	215-481-4911	P. O. Box 538, Allentown, PA 18105.
AJY	Ajay Chemicals, Inc	404-943-6202	1400 Industry Rd., Powder Springs, GA 30073.
AJI	Ajinomoto U.S.A., Inc	212-688-8360	4020 Ajinomoto Dr., Raleigh, NC 27610.
ARC	Akzo Chemie America, Armak Chemical	312-786-0400	300 S. Wacker Dr., Chicago, IL 60614.
CAD	Noury Chemicals	716-778-8554	2153 Lockport-Olcott Rd., Burt, NY 14028.
ABP	Alabama By-Products Corp	205-250-5400	P. O. Box 10246, Birmingham, AL 35202.
AGC	Alberta Gas Chemicals, Inc	201-267-1400	7 Century Dr., Parsippany, NJ 07054.
ALC	Alco Chemical Corp	615-629-1405	909 Mueller Dr., Chattanooga, TN 37406.
AAC	Alcolac, Inc	301-355-2600	3440 Fairfield Rd., Baltimore, MD 21226.
ALD	Aldrich Chemical Co., Inc	414-273-3850	940 W. St. Paul Ave., Milwaukee, WI 53233.
ALE	Alex Chemical Co	717-462-3500	119 N. Union St., Shenandoah, PA 17976.
ALG	Allegheny Chemical Corp	814-776-1186	Gillis Ave., Ridgway, PA 15853.
ALM	Allemania Chemical Co	504-687-6311	P. O. Box 716, Plaquemine, LA 70764.
ALL	Alliance Chemical, Inc	201-344-2344	33 Avenue P, Newark, NJ 07657.
BME	Allied-Bendix Corp., Friction Materials Div.	518-273-6550	P. O. Box 238, Green Island, NY 12181.
	Allied Corp.:		
ACS	Chemical Section	201-455-5000	P. O. Box 1087-R, Morristown, NJ 07960.
ACU	Union Texas Petroleum Corp	713-960-7500	P. O. Box 2120, Houston, TX 77001.
ALX	Alox Corp	716-282-1295	3943 Buffalo Ave., Niagara Falls, NY 14303.
APH	Alpha Corporation of Tennessee	901-853-2450	P. O. Drawer A, Hwy. 57E, Collierville, TN 38017.
ALP	Alpha Laboratories, Inc	303-756-1338	1685 S. Fairfax St., P. O. Box 22223, Denver, CO 80222.
HES	Amerada Hess Corp. (Hess Oil Virgin Island Corp.)	201-750-6000	1 Hess Plaza, Woodbridge, NJ 07095.
BJL	American Burdick & Jackson	616-726-3171	1953 S. Harvey St., Muskegon, MI 49442.
AMB	American Bio-Synthetics Corp	414-384-7017	710 W. National Ave., P. O. Box 04275, Milwaukee, WI 53204.
ACY	American Cyanamid Co	201-831-2768	One Cyanamid Plaza, Wayne, NJ 07470.
HST	American Hoechst Corp.:		
	Hoechst Fibers Industries Div	803-579-5750	P. O. Box 5887, Spartanburg, SC 29301.
	Petrochemicals/Plastics Group	201-231-2477	Route 202-206 North, Somerville, NJ 08876.
STC	Sou-tex Words	704-827-7531	P. O. Box 866, Mount Holly, NC 28120.
	Specialty Products Group, Rhode Island Works.	401-823-2000	129 Quidnick St., Coventry, RI 02816.
ASY	American Synthetic Rubber Corp	502-448-2761	P. O. Box 32960, Louisville, KY 40232.
ALB	Ames Laboratories, Inc	203-874-2463	200 Rock Lane, P. O. Box 3024, Milford, CT 06460.
HVG	Ametek, Inc., Haveg Div	302-995-0410	900 Greenbank Rd., Wilmington, DE 19808.
AMV	Amvac Chemical Corp	213-264-3910	4100 E. Washington Blvd., Los Angeles, CA 90023.
OH	Anaquest	608-273-0019	2005 W. Beltline Hwy., Madison, WI 53713.
ADC	Anderson Development Co	517-263-2121	1415 E. Michigan St., Adrian, MI 49221.
ANG	Angus Chemical Co	312-498-6700	2211 Sanders Rd., Northbrook, IL 60062.
APX	Apex Chemical Co., Inc	201-354-5420	200 S. 1st St., P. O. Box 254, Elizabethport, NJ 07206.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
APO	Apollo Colors, Inc	312-564-9190	899 Skokie Blvd., Northbrook, IL 60062.
ADM	Archer-Daniels-Midland, ADM Clinton	217-424-5200	1251 Beaver Channel Pkwy., Clinton, IA 52732.
ARD	Ardmore Chemical Co	201-481-2406	29 Riverside Ave., Newark, NJ 07104.
ARN	Arenol Chemical Corp	212-784-0948	40-33 - 23d St., Long Island City, NY 11101.
ARZ	Arizona Chemical Co	201-794-3200	1600 Route 208, Fair Lawn, NJ 07410.
ALS	Armco, Inc	513-425-5000	703 Curtis St., Middletown, OH 45043.
AGP	Armour-Dial, Inc	312-892-4381	2000 Aucutt Rd., Montgomery, IL 60538.
ARP	Armour Pharmaceutical Co	815-932-6771	P. O. Box 511, Kankakee, IL 60901.
ARK	Armstrong World Industries, Inc	717-397-0611	Liberty & Charlotte Sts., Lancaster, PA 17604.
ARO	ARNCO	213-567-1378	5141 Firestone Place, South Gate, CA 90280.
ARL	Arol Chemical Products Co	201-344-1510	649 Ferry St., Newark, NJ 07105.
ARS	Arsynco, Inc	201-933-2323	126-20 Northern Blvd., Flushing, NY 11368.
ASH	Ashland Oil, Inc	614-889-3333	P. O. Box 2219, Columbus, OH 43216.
	Ashland Petroleum Co	606-329-3333	P. O. Box 391, Ashland, KY 41101.
API	Asoma Polymers, Inc	617-978-0144	Old Webster Rd., Oxford, MA 01540.
ALI	Associated Lead, Inc	215-427-3000	2545 Aramingo Ave., Philadelphia, PA 19125.
BLA	Astor Products, Inc., Blue Arrow Div.	904-783-5000	5244 Edgewood Ct., Jacksonville, FL 32205.
ATL	Atlantic Industries, Inc	201-235-1800	10 Kingsland Rd., Nutley, NJ 07110.
ATR	Atlantic Richfield Co., Arco Chemical Co.	215-557-2574	1500 Market St., Philadelphia, PA 19101.
APD	Atlas Powder Co. Sub. of Tyler Corp	417-624-0212	P. O. Box 87, Joplin, MO 64802.
APR	Atlas Processing Co	318-636-2711	P. O. Box 3099, Shreveport, LA 71133.
ACC	Atomergic Chemetals Corp	516-349-8800	100 Fairchair Ave., Plainview, NY 11803.
AUX	Auralux Corp	203-886-2616	29 Stott Ave., Norwich, CT 06389.
KCH	Joseph Ayers, Inc	215-837-1808	275 Keystone Dr., Bethlehem, PA 18017.
BAS	BASF Wyandotte Corp	616-392-2391 201-263-4050	491 Columbus Ave., Holland, MI 49423. and 100 Cherry Hill Rd., Parsippany, NJ 07054.
DBC	Badische Corp	804-887-6000	P. O. Box Drawer D, Williamsburg, VA 23187.
BKC	J. T. Baker Chemical Co	201-859-2151	222 Red School Lane, Phillipsburg, NJ 08865.
BAK	Baker International - Magna Corp	713-791-6340	P. O. Box 33387, Houston, TX 77233.
BLM	Balchem Corp., Arc Chemical Div	914-355-2891	P. O. Box 180, Slate Hill, NY 10973.
BLC	Ball Chemical Co., Ranbar Technology, Inc.	412-486-1111	1486 Butler Plank Rd., Glenshaw, PA 15116.
BAX	Baxter Travenol Laboratories, Inc	312-948-2000	6301 Lincoln Ave., Morton Grove, IL 60053.
	Beatrice Foods:		
BFF	Farboil Co. Div	301-477-8200	8200 Fisher Rd., Baltimore, MD 21222.
BPT	Permuthane Div	617-531-1880	Corwin St., Peabody, MA 01960.
BCK	Beckman Instruments, Inc	619-438-9151	6200 El Camino Real, Carlshad, CA 92008.
	Spinco Div	714-871-4848	1050 Page Mill Rd., Palo Alto, CA 94304.
BEE	Beecham, Inc., Beecham Laboratories Div.	201-469-5200	101 Possumtown Rd., Piscataway, NJ 08854.
BCM	Belding Chemical Industries	212-944-6040	P. O. Box 300, Grosvenor Dale, CT 06246.
BLZ	Belzak Corp	201-773-0602	850 Bloomfield Ave., Clifton, NJ 07012.
BEN	Bennett's Paint and Glass	801-486-2211	P. O. Box 1320, Salt Lake City, UT 84110.
BLY	Berkley & Co., Inc	713-336-1520	1 Trilene Dr., Spirit Lake, IA 51360.
BTS	Bethlehem Steel Corp	215-694-4522	Martin Tower - 8th Fl., Bethlehem, PA 18016.
BDS	Biddle Sawyer Corp	212-736-1580	2 Penn Plaza - Suite 2439, New York, NY 10121.
BNS	Binney and Smith, Inc	215-253-6271	P. O. Box 431, 1100 Church Lane, Easton, PA 18044-0431.
BOC	Biocraft Laboratories, Inc	201-796-3434	12 Industrial Park, Waldwick, NJ 07463.
BNP	Bison Nitrogen Products Co	712-277-1340	Terra Centre, 600 4th St., Sioux City, IA 51101.
LAK	Bofors Nobel, Inc	616-788-2341	5025 Evanston Ave., Muskegon, MI 49443.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
BOR	Borden, Inc.:		
	Borden Chemical Div	614-225-4000	180 E. Broad St., Columbus. OH 43215.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	304-424-5411	International Center, Parkersburg, WV 26101.
BFP	Breddo Food Products Corp., Inc	913-321-5300	18th & Kansas Ave., Kansas City, KS 66105.
BMC	Brin-Mont Chemicals, Inc	919-292-0566	3921 Spring Garden St., Greensboro, NC 27407
BRS	Bristol-Myers Co	212-546-4000	345 Park Ave., 5th Fl., New York, NY 10154.
BRU	M. A. Bruder & Sons, Inc	215-353-5100	52d St. & Grays Ave., Philadelphia, PA 19143.
BUK	Buckeye Cellulose Corp	901-320-8183	1001 Tillman Ave., Memphis, TN 38122.
BKM	Buckman Laboratories, Inc	901-278-0330	1256 N. McLean Blvd., Memphis, TN 38122.
BCC	Buffalo Color Corp	716-827-4500	340 Elk St., Buffalo, NY 14210.
BUR	Burroughs Wellcome Co	919-248-3000	3030 Cornwallis Rd., Research Triangle Park, NC 27709.
CLF	CF&I Steel Corp., Pueblo Plant	303-561-6500	P. O. Box 316, Pueblo, CO 81002.
CFI	CF Industries, Inc	312-438-9500	Salem Lake Dr., Long Grove, IL 60047.
CCC	C.N.C. Chemical Corp	401-751-7711	P. O. Box 997, Annex Station, Providence, RI 02901.
	CPC International, Inc.:		
ACR	Acme Resin Corp	312-771-9600	1401 Circle Ave., Forest Park, IL 60130.
CRN	Amerchol Corp	201-287-1600	136 Talmadge Rd., P. O. Box 4051, Edison, NJ 08818-4051.
PEN	Penick Corp	201-935-6600	1050 Wall St. W., Lyndhurst, NJ 07071.
CPS	CPS Chemical Co., Inc	201-727-3100	P. O. Box 162, Old Bridge, NJ 08857.
CYR	CYRO Industries	201-930-0100	155 Tice Blvd., P. O. Box 8588, Woodcliff Lake, NJ 07675.
CMB	Cambridge Industries Co	617-924-0026	440 Arsenal St., Watertown, MA 02172.
SVC	Capital City Products Co., Armstrong Chemical Plants.	608-752-9007	1530 S. Jackson St., Janesville, WI 53545.
CBC	Carbose Corp	814-443-1611	100 Maple St., Somerset, PA 15501.
CGL	Cargill, Inc	612-475-7634	P. O. Box 5630, Minneapolis, MN 55440.
CHC	Carpenter Chemical Co	804-359-0800	P. O. Box 27205, Richmond, VA 23261.
BSC	Cascade Resins, Inc	503-343-2111	P. O. Box 1989, Eugene, OR 97440.
CAS	Caschem, Inc	201-858-7900	40 Avenue A, Bayonne, NJ 07002.
AZT	Catalyst Resources, Inc	713-682-5300	P. O. Box 250, Elyria, OH 44035.
CCL	Catawba-Charlab, Inc	704-523-4242	5046 Old Pineville Rd., P. O. Box 240497, Charlotte, NC 28224.
CEL	Celanese Corp.:		
	Celanese Chemical Co., Inc	214-689-4000	1250 W. Mockingbird Lane, Dallas, TX 75247.
	Celanese Engineering Resins	201-635-2600	26 Main St., Chatham, NJ 07928.
	Celanese Fibers Operations	704-554-2000	P. O. Box 32414, Charlotte, NC 28232.
	Celanese Specialty Resins	502-585-8011	P. O. Box 37600, Louisville, KY 40233.
CLP	Cell Products, Inc	201-828-6100	5 Georges Rd., New Brunswick, NJ 08901.
CNT	Certainteed Corp	215-341-7000	P. O. Box 860, Valley Forge, PA 19482.
CPR	Certified Processing Corp	201-923-5200	U.S. Highway #22, Hillside, NJ 07205.
GRS	Champlin Petroleum Co	512-882-8873	P. O. Box 9176, Corpus Christi, TX 78469.
SOG	Charter International Oil Co	713-923-3578	P. O. Box 5008, Houston, TX 77012.
CHA	Chattanooga Coke & Chemicals Co., Inc	615-821-3541	4800 Central Ave., P. O. Box 2339, Chattanooga, TN 37410.
CHT	Chattem, Inc	615-821-4571	1715 W. 38th St., Chattanooga, TN 37409.
CBD	Chembond Corp	503-746-6501	P. O. Box 270, Springfield, OR 97477.
CFX	Chemfax, Inc	601-863-6511	Three Rivers Rd., Gulfport, MS 39503.
CI	Chem-Fleur, Inc	201-589-4266	200 Pulaski St., Newark, NJ 07105.
CXI	Chemical Exchange Industries, Inc	713-526-8291	P. O. Box 812, Houston, TX 77001.
CMT	Chemithon Corp	206-937-9954	5430 W. Marginal Way. SW., Seattle, WA 98106.
CHL	Chemol, Inc	919-272-3121	P. O. Box 20687, Greensboro, NC 27420.
CRT	Chemos Corp	201-623-3334	225-235 Emmett St., Newark, NJ 07114.
SOC	Chevron Corp., Chevron Chemical Corp	415-894-7700	575 Market St., San Francisco, CA 94105.
CHO	Cholineco, Inc	803-943-4176	P. O. Box 476, Hampton, SC 29924.
CHH	CHR. Hansen's Laboratory, Inc	414-476-3630	9015 W. Maple St., West Allis, WI 53214.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
CGY	Ciba-Geigy Corp	914-478-3131	444 Saw Mill River Rd., Ardsley, NY 10502.
	Agricultural Div	919-292-7100	P. O. Box 18300, Greensboro, NC 27419.
CGO	Citgo Petroleum Corp	318-491-6011	P. O. Box 1562, Lake Charles, LA 70602.
CLK	Clark Oil & Refining Corp	314-889-9600	7930 Clayton Rd., St. Louis, MO 63117.
CLI	Clintwood Chemical Co	312-890-5790	4342 S. Wolcott Ave., Chicago. IL 60609.
CSP	Coastal Corp., Coastal States Petroleum Co.	512-887-4100	P. O. Drawer 521, Corpus Christi, TX 78403.
CP	Colgate-Palmolive Co	212-310-2000	300 Park Ave., New York, NY 10022.
CLD	Colloids, Inc	201-926-6100	394 Frelinghuysen Ave., Newark, NJ 07114.
CCS	Colorado Chemical Specialties, Inc	303-278-1963	4880 Robb St. - Unit #2, Wheat Ridge, CO 80033.
CRS	Colorado Resins, Inc	303-278-1963	4880 Robb St. - Unit #2, Wheat Ridge, CO 80033.
CIC	Color Chem International Corp	201-444-8563	7 Plymouth Rd., Glen Rock, NJ 07452.
CNC	Columbia Nitrogen Corp	404-823-4000	P. O. Box 1483(13), Augusta, GA 30913.
COC	Columbia Organic Chemical Co., Inc	803-425-1786	P. O. Box 1045, Camden, SC 29020.
CEI	Combustion Engineering, Inc., C-E Cast Products.	412-344-7500	P. O. Box 457, Muse, PA 15350.
CAC	Cominco American, Inc	509-747-6111	W. 818 Riverside Ave., Spokane, WA 99201.
CMP	Commercial Products Co., Inc	201-427-6887	117 Ethel Ave., Hawthorne, NJ 07506.
CNI	Conap, Inc	716-372-9650	1405 Buffalo St., Olean, NY 14760.
CON	Concord Chemical Co., Inc	609-966-1526	17th & Federal Sts., Camden, NJ 08105.
CO	Conoco Specialty Products, Inc	713-293-1767	600 N Daisy Ashford Rd., P. O. Box 2197, Houston, TX 77252.
CTL	Continental Chemical Co	201-472-5000	270 Clifton Blvd., Clifton, NJ 07015.
CTP	Continental Polymers, Inc	213-637-2103	2225 E. Del Amo Blvd., Compton, CA 90220.
CPV	Cook Paint & Varnish Co	816-391-6000	P. O. Box 389, Kansas City, MO 64141.
CFA	Cooperative Farm Chemicals Association.	913-843-7300	P. O. Box 308, Lawrence, KS 06044.
COP	Coopers Creek Chemical Corp	215-828-0375	River Rd., West Conshohocken, PA 19428.
CPY	Copolymer Rubber & Chemical Corp	504-355-5655	P. O. Box 2591, Baton Rouge, LA 70821.
CLU	Core-Lube, Inc	217-662-2136	P. O. Box 572, Danville, IL 61832.
CRP	Corpus Christi Petrochemicals Co	713-751-7100	1000 Louisiana St., Suite 2700, Houston, TX 77002.
COS	Cosan Chemical Corp	201-460-9300	400 - 14th St., Carlstadt, NJ 07072.
CSD	Cosden Oil & Chemical Co	214-750-2400	8350 N. Central, Dallas, TX 75206.
CRD	Croda, Inc	212-683-3089	183 Madison Ave., New York, NY 10016.
CK	Crompton & Knowles Corp	215-376-8749	500 Pear St., Reading, PA 19603.
CCP	Crown Central Petroleum Corp	301-539-7400	1 N Charles St., Baltimore, MD 21203.
USM	Crown Metro, Inc	803-277-1870	P. O. Box 5695, Greenville, SC 29606.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	206-254-0922	P. O. Box 4266, Vancouver, WA 98662.
CYT	Cumberland International Corp	713-682-1221	1523 N. Post Oak Rd., Houston, TX 77055.
CUS	Custom Pigments Corp	312-252-7273	2125 W. Rice St., Chicago, IL 60622.
CTR	Customs Resins Div. of Bemis Co., Inc	612-340-6000	800 Northstar Ctr., Minneapolis, MN 55402.
CYH	Cychem, Inc	513-641-4371	P. O. Box 16056, Cincinnati, OH 45216.
CYL	Cyclo Chemical Corp	305-592-6700	7500 N.W. 66th St., Miami, FL 33166.
AMD	Cyclo Products, Inc	213-582-6411	1922 E. 64th St., Los Angeles, CA 90001.
DAN	Dan River, Inc., Chemical Products Div.	804-799-7000	P. O. Box 261, Danville, VA 24543.
DRL	Darling & Co	312-927-3000	4650 S. Racine Ave., Chicago, IL 60609.
DPI	Dart Polymers, Inc. Sub. of Dart Container Corp.	517-676-3800	432 Hogsback Rd., Mason. MI 48854.
DYS	Davies-Young Co	314-291-1900	2700 Wagner Place, Maryland Heights, MO 63043.
DGO	Day-Glo Color Corp	216-391-7070	4515 St. Clair Ave., Cleveland, OH 44103.
DPW	Deepwater, Inc	714-[illegible]-3522	P. O. Box 17599, Irvine, CA 92713.
DEG	Degen Oil & Chemical Co., Inc	201-4[illegible]-1192	200 Kellogg St., Jersey City, NJ 07305.
DGC	Degussa Corp	201-28[illegible]-6500	Rt. 46 at Hollister Rd., Teterboro, NJ 07608.
DRR	Delta Resins & Refractories	414-462-1200	6263 N. Teutonia Ave., Milwaukee, WI 53209.
DKA	Denka Chemical Corp	713-477-8821	8701 Park Place Blvd., Houston, TX 77017.
DNS	Dennis Chemical Co	314-771-1800	2700 Papin St., St. Louis, MO 63103.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTI-FICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
FRI	Farmland Industries, Inc	816-459-6407	P. O. Box 7305, Kansas City, MO 64116.
FEL	Felton International, Inc	718-497-4664	599 Johnson Ave., Brooklyn, NY 11237.
FER	Ferro Corp.:		
	Ferro Chemical Div	216-641-8580	7050 Krick Rd., Bedford, OH 44146.
	Grant Chemical Div	504-654-6801	P. O. Box 263, Baton Rouge, LA 70821.
	Keil Chemical Div	219-931-2630	3000 Sheffield Ave., Hammond, IN 46320.
	Ottawa Chemical Div	419-691-3507	700 N. Wheeling St., Toledo, OH 43605.
	Productol Chemical Div	213-945-3401	10051 Romandel Ave., Santa Fe Springs, CA 90670.
RBC	Fike Chemicals, Inc	304-755-3336	P. O. Box 550, Nitro, WV 25143.
FTX	Finetex, Inc	201-797-4686	418 Falmouth Ave., Elmwood Park, NJ 07407.
	Firestone Tire & Rubber Co.:		
FRF	Firestone Fibers & Textile Co	804-541-2000	P. O. Box 450, Hopewell, VA 23869.
FRS	Firestone Synthetic Rubber & Latex Co. Div.	216-379-7495	P. O. Box 2786, Akron, OH 44301.
FST	First Chemical Corp	601-762-0870	P. O. Box 1427, Pascagoula, MS 39567.
FPC	Flambeau Paper Corp	715-762-3231	200 N. First Ave., Park Falls, WI 54552.
FLM	Fleming Laboratories, Inc	704-372-5613	2205 Thrift Rd., P. O. Box 34384, Charlotte, NC 28234.
CIK	Flint Ink Corp., Cal/Inc Div	415-525-1188	1404 - 4th St., Berkeley, CA 94710.
FTE	Foote Mineral Co	215-363-6500	Route 100, Exton, PA 19341.
FMO	Ford Motor Co., Paint Plant	313-466-1913	400 Groesbeck Hwy., Mt. Clemens, MI 48043.
FOR	Formosa Plastics Corp:		
	Louisiana	504-356-3341	P. O. Box 271, Baton Rouge, LA 70821.
	USA	201-966-6980	66 Hanover Rd., Florham Park, NJ 07932.
FJI	Foy-Johnston, Inc	513-631-4270	1776 Mentor Ave., Cincinnati, OH 45212.
FKE	Frank Enterprise, Inc	614-253-5519	700 Rose Ave., Columbus, OH 43219.
FLN	Franklin Chemical International	614-443-0241	2020 Bruck St., Columbus, OH 43207.
FRE	Freeman Chemical Corp	414-284-5541	P. O. Box 247, Port Washington, WI 53074.
FB	Fritzsche Dodge & Olcott, Inc	212-929-4100	76 - 9th Ave., New York, NY 10011.
FLH	H. B. Fuller Co	612-645-3401	3520 Lexington Ave. N., St. Paul, MN 55112.
GAF	GAF Corp., Chemical Corp	201-862-2600	P. O. Box 12, Linden, NJ 07036.
GLX	Galxie Chemicals Corp	201-279-0558	26 Piercy St., Paterson, NJ 07524.
GAN	Gane's Chemicals, Inc	212-391-2580	1114 Avenue of the Americas, New York, NY 10036.
GNT	Gencorp, Polymers Div	216-798-3320	1 General St., Akron, OH 44329.
GNR	Genencor, Inc	415-588-3475	180 Kimball Way, S. San Francisco, CA 94080.
GE	General Electric Co	614-622-5310 413-494-4793	1350 S. Second St., Coshocton, OH 43812 and 1 Plastics Ave., Pittsfield, MA 01201.
GEI	Insulating Materials	518-385-7999	1 Campbell Rd., Schenectady, NY 12345.
SPD	Silicone Products Dept	518-266-2641	Waterford-Mechanicville Rd., Bldg. 11-MD24, Waterford, NY 12188.
GNF	General Foods Manufacturing Corp., Maxwell House Coffee Div.	201-420-3436	1125 Hudson St., Hoboken, NJ 07030.
GLC	General Latex & Chemical Corp	617-576-8000	675 Mass. Ave., Cambridge, MA 02139.
GRG	P D George Co	314-621-5700	5200 N. Second St., St. Louis, MO 63147.
	Georgia-Pacific Corp.:		
PSP	Bellingham Div	206-733-4410	P. O. Box 1236, Bellingham, WA 98227.
GP	Houston Div	404-521-4000	P. O. Box 1959, Pasadena, TX 77501.
GP	Plaquemine Div	404-521-4000	P. O. Box 629, Plaquemine, LA 70765.
GP	PVC Compound Div	404-521-5200	8000 G.S. R.I. Rd., Baton Rouge, LA 70808.
GP	Resins Operations	404-521-4000	133 Peachtree St. NE., Atlanta, GA 30361.
TNI	The Gillette Co., Chemical Div	617-421-7000	3500 W. 16th St., N. Chicago, IL 60064.
GBF	Gist-Brocades, USA, Inc	704-527-9000	5550 - 77 Center Dr., P. O. Box 241068, Charlotte, NC 28224.
GIV	Givaudan Corp	201-365-8000	100 Delawanna Ave., Clifton, NJ 07014.
GAI	Glasurit America, Inc	313-861-1000	3301 Bourke Ave., Detroit, MI 48238.
GLY	Glyco, Inc	203-847-1191	488 Main St., P. O. Box 5100, Norwalk, CT 06856.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTI-FICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
DRB	The Derby Co., Inc	617-342-5831	231 Industrial Park, 119 Authority Dr., Fitchburg, MA 01420.
DSO	DeSoto, Inc	312-391-9000	1700 S. Mt. Prospect Ave., Des Plaines, IL 60018.
UDI	DeSoto, Inc., Petrochemicals	817-625-2111	600 E. Central St., P. O. Box 2199, Fort Worth, TX 76113.
DEX	Dexter Chemical Corp	212-542-7700	845 Edgewater Rd., Bronx, NY 10474.
HYC	Hysol Div	818-968-6511	15051 E. Don Julian Rd., Industry, CA 91749.
MID	Midland Div	312-623-4200	E. Water St., Waukegan, IL 60085.
DAZ	Diaz Chemical Corp	716-638-6321	P. O. Box 194, Holley, NY 14470.
PLN	Disogrin Industries Corp	603-669-4050	Grenier Industrial Airpark, Manchester, NH 03130.
DPP	Dixie Pine Chemicals, Inc	601-584-6221	P. O. Box 470, Hattiesburg, MS 39401.
DRC	Dock Resins Corp	201-862-2351	1512 W. Elizabeth Ave., Linden, NJ 07036.
DOM	Dominion Products, Inc	718-499-3050	882 - 3d Ave., Brooklyn, NY 11232.
DVC	Dover Chemical Corp. Sub. of ICC Industries, Inc.	216-343-7711	W. 15th & Davis Sts., P. O. Box 40, Dover, OH 44622.
DOW	Dow Chemical Co	517-636-1000	2020 Willard H. Dow Center, Midland, MI 48640.
DCC	Dow Corning Corp	517-496-4000	2200 W. Salzburg Rd., Auburn, MI 48640.
DRX	Drexel Chemical Co	901-774-4370	2487 Penn St., P. O. Box 9306, Memphis, TN 38109.
DUP	E. I. duPont de Nemours & Co., Inc	302-774-1000	DuPont Bldg., Wilmington, DE 19898.
DSC	Dye Specialties, Inc	201-866-9504	100 Plaza Center, Secaucus, NJ 07094.
MMC	EM Industries, Inc., EM Science Div	609-354-9200	2909 Highland Ave., Cincinnati, OH 45212.
AGI	EMS-American Grilon, Inc	803-481-9173	P. O. Box 1948, Sumter, SC 29150.
EPI	Eagle Pitcher Industries, Ohio Rubber Co. Div.	216-942-6500	P. O. Box 1398, Denton, TX 76201.
ECC	Eastern Color & Chemical Co	401-331-9000	35 Livingston St., Providence, RI 02904.
EK	Eastman Kodak Co	716-724-4000	343 State St., Rochester, NY 14650.
EKT	Tennessee Eastman Co. Div	615-229-2000	P. O. Box 1974, Kingsport, TN 37662.
EKX	Texas Eastman Co. Div	214-236-5000	P. O. Box 1974, Kingsport, TN 37662.
ESA	East Shore Chemical Co	616-726-3106	1221 E. Barney Ave., Muskegon, MI 49443.
EEP	Eaton Corp., Industrial Polymers Products Div.	216-523-5000	1199 S. Chillicothe Rd., Aurora, OH 44202.
ELN	Elan Chemical Co	201-344-8014	268 Doremus Ave., Newark, NJ 07105.
ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.	216-749-2605	P. O. Box 09186, Cleveland, OH 44109.
ELP	El Paso Products Co	915-333-7200	P. O. Box 3986, Odessa, TX 79760.
TCH	Emery Industries, Inc., Trylon Div	803-963-4031	P. O. Box 628, Mauldin, SC 29662.
USM	Emhart Corp., Bostik U.S. Div	617-777-0100	Boston St., Middleton, MA 01949.
EMK	Emkay Chemical Co	201-352-7053	319 - 2d St., Elizabeth, NJ 07206.
EKO	Empire Coke Co	205-945-8061	530 Beacon Pwy. W., Birmingham, AL 35209.
ENO	Enenco, Inc	901-320-5800	P. O. Box 125, Memphis, TN 38101.
EPC	Enterprise Products Co. of Mississippi.	713-880-6500	P. O. Box 4324, Houston, TX 77210.
ESS	Essential Chemicals Corp	404-691-3000	28391 Essential Rd., Merton, WI 53056.
ESX	Essex Chemical Corp., Essex Industrial Chemicals, Inc.	201-773-6300	1401 Broad St., Clifton, NJ 07015.
EHC	Ethichem Corp	201-933-7880	150 Grand St., Carlstadt, NJ 07072.
TNA	Ethyl Corp	804-788-5000	330 S. 4th St., Richmond, VA 23219.
	Polymer Products Div	804-788-5000	8000 G.S.R.I. Ave., Baton Rouge, LA 70808.
ENJ	Exxon Chemical Americas	713-870-6018	P. O. Box 3272, Houston, TX 77001.
FMC	FMC Corp	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMN	Agricultural Chemical Corp	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMB	Specialty Chemicals Div	716-876-8300	Sawyer Ave. & River Rd., Town of Tonawanda, NY 14150.
FRP	FRP Co	912-367-3616	P. O. Box 349, Baxley, GA 31513.
FAB	Fabricolor Manufacturing Corp	201-742-3900	P. O. Box 2398, Paterson, NJ 07509.
FMT	Fairmount Chemical Co., Inc	201-344-5790	117 Blanchard St., Newark, NJ 07105.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
HUS	Husky Industries, Inc	404-393-1430	P. O. Drawer I, Dickinson, ND 58601.
HYN	Hynson, Westcott, & Dunning, Inc	301-837-0890	Charles & Chase Sts., Baltimore, MD 21202.
ICI	ICI Americas, Inc	302-575-3000	Concord Pike & Murphy Rd., Wilmington, DE 19897.
	Chemicals Div	302-575-3000	Wilmington, DE 19897.
RAY	ITT Rayonier, Inc	203-348-7000	1177 Summer St., Stamford, CT 06904.
IGC	Indiana Gas & Chemical Corp	812-232-0231	1341 Hulman St., Terre Haute, IN 47808.
IND	Indol Color Co., Inc	201-242-1300	1029 Newark Ave., Elizabeth, NJ 07201.
IDC	Industrial Color, Inc	815-722-7402	50 Industry Ave., Bldg. 28, Joliet, IL 60435.
INL	Inland Steel Co	312-346-0300	30 W. Monroe St., Chicago, IL 60603.
ICF	Inmont Corp	201-365-3400	1255 Broad St., Clifton, NJ 07015.
ICC	Inmont Corp. Div of United Technologies Corp.	201-427-6700	150 Wagaraw Rd., Hawthorne, NJ 07506.
WM	Inolex Chemical Co	215-271-6400	Jackson & Swanson Sts., Philadelphia, PA 19148.
	Insilco Corp.:		
ENP	Enterprise Co. Div	312-541-9000	1191 S. Wheeling Rd., Wheeling, IL 60090.
SPC	Sinclair Paint Co. Div	213-268-2511	3960 E. Washington Blvd., Los Angeles, CA 90023.
ILI	Interlake, Inc	312-986-6600	2015 Spring Rd., Oak Brook, Il 60521.
IFF	International Flavor & Fragrances, Inc.	212-765-5500	521 W. 57th St., New York, NY 10019.
IMC	International Minerals & Chemical Corp.:	812-232-0121	P. O. Box 207, Terra Haute, IN 47808.
	Industrial Chemicals Div	312-564-8600	421 E. Hawley St., Mundelein, IL 60060.
IPC	Interplastic Corp	612-331-6850	2015 NE Broadway, Minneapolis, MN 55413.
CCA	Interstab Chemicals, Inc	201-247-2202	500 Jersey Ave., New Brunswick, NJ 08903.
IOV	Iovite, Inc	312-481-8900	21625 Oak St., P. O. 129, Mattison, IL 60443.
IRI	Ironsides Co	614-224-2228	270 W. Mound St., Columbus, OH 43215.
JRC	Jarchem Industries, Inc	201-344-0600	40 Ball St., Newark, NJ 07105.
JFR	George A. Jeffreys & Co., Inc	703-389-8220	P. O. Box 709, Salem, VA 24153.
JRG	Andrew Jergens Co	513-421-1400	2535 Spring Grove Ave., Cincinnati, OH 45214.
JTO	Jetco Chemicals, Inc	214-872-3011	P. O. Box 1898, Corsicana, TX 75110.
UPF	Jim Walter Resources, Inc., CIC Div	205-849-3031	P. O. Box 5327, Birmingham, AL 35217.
MCA	Johnson Matthey, Inc., Pigments Dept	201-373-7801	1200 Grove St., Irvington, NJ 07111.
JNS	S. C. Johnson & Son, Inc	414-631-2000	1525 Howe St., Racine, WI 53403.
JOB	Jones-Blair Co	214-353-1600	2728 Empire Center, Dallas, TX 75235.
JOR	Jordan Chemical Co	215-583-7000	1830 Columbia Ave., Folcroft, PA 19032.
KAI	Kaiser Aluminum & Chemical Corp	415-271-3300	P. O. Box 337, Gramercy, LA 70052.
KLM	Kalama Chemical, Inc	206-682-7890	Suite 1110, Bank of California Center, Seattle, WA 98164.
KF	Kay-Fries, Inc., Chemical Div., Dynamit Nobel of America, Inc.	201-784-0200	10 Link Dr., Rockleigh, NJ 07647.
KMP	Kelly-Moore Paint Co., Inc	415-592-8337	987 Commercial St., San Carlos, CA 94070.
KCU	Kennecott Minerals Co., Utah Copper Div.	801-322-6178	P. O. Box 31838, Salt Lake City, UT 84131.
KPI	Kenrich Petrochemicals, Inc	201-823-9000	P. O. Box 32, 140 E. 22nd St., Bayonne, NJ 07002.
KTP	Kent Polymers, Inc	717-455-2021	666 Dietrich Ave., P. O. Box 920, Hazelton, PA 18201.
KYS	Keysor Corp	805-259-2360	P. O. Box 308, Saugus, CA 91350.
KCW	Keystone Color Works, Inc	717-854-9541	151 W. Gay Ave., York, PA 17403.
CHF	Kincaid Enterprises, Inc	304-755-3377	P. O. Box 671, Nitro, WV 30067.
KNP	Knapp Products, Inc	201-478-7945	220 Kemah Rd., Ridgewood, NJ 07450.
KHI	Koch Refining Co	316-832-5182	P. O. Box 2302, Wichita, KS 67201.
KON	H. Kohnstamm & Co., Inc	212-620-4800	161 Avenue of the Americas, New York, NY 10013.
KMC	Komac Paint, Inc	303-534-5191	201 Osage ST., Denver, CO 80204.

ALPHABETICAL DIRECTORY OF MANUFACTURERS, 984--CONTINUED

LEPHONE UMBER	OFFICE ADDRESS
447-6000	6100 Oak Tree Blvd., Cleveland, OH 44131.
278-5311	3760 Highland Dr., Suite 200, Salt Lake City, UT 84106.
796-8668	1144 E. Market St., Akron, OH 44316.
357-2311	P. O. Box 27147, Memphis, TN 38127.
861-6600	55 Hayden Ave., Lexington, MA 02173.
655-8741	90 Tokeneke Rd., Darien, CT 06820.
861-6600	55 Hayden Ave., Lexington, MA 02173.
264-4211	P. O. Box 349, Muscatine, IA 52761.
791-6700	P. O. Box 360, Elmwood Park, NJ 07407.
463-2511	P. O. Box 2200, Hwy. 52, W. Lafayette, IN 47906.
456-6832	P. O. Box 26, State Hwy. #690, Greenwood, VA 22943.
475-8101	216 E. Holly Hill Rd., Thomasville, NC 27360.
52-5181	1350 Steele Ave., S.W., Grand Rapids, MI 49507.
754-2000	P. O. Box 2001, Houston, TX 77252.
547-7030	551 Granville, Hillside, IL 60162.
86-3132	111 U.S. Hwy. 22, P. O. Box 175, Springfield, NJ 07081.
67-4600	7300 S. Central Ave., Chicago, IL 60638.
43-8703	82 Burlews Ct., Hackensack, NJ 60638.
97-7990	13601 S. Ashland Ave., Riverdale, IL 60627.
94-3361	1313 Windsor Ave., P. O. Box 147, Columbus, OH 43216.
92-9200	30100 Chagrin Blvd., Cleveland, OH 44124.
33-6665	173 Sussex St., Jersey City, NJ 07302.
38-1000	King George Post Rd., Fords, NJ 08863.
43-5800	P. O. Box 899, Clinton, IA 52733.
24-5568	3601 Decker Dr., P. O. Box 4176, Baytown, TX 77520.
28-8000	7900 W. 78th St., Minneapolis, MN 55435.
43-1150	310 N. Front St., P. O. Box 1694, Wilmington, NC 28402.
4-5000	Hercules Plaza, Wilmington, DE 19899.
4-6646	822 S. 14th St., Manitowoc, WI 54220.
8-2000	790 - 21st Ave., Paterson, NJ 07513.
1-8225	111 E. Hawthorne Ave., P. O. Box 157, Valley Stream, NY 11580.
3-6600	2500 - 33d Ave., P. O. Box 188, Gulfport, MS 39501.
3-1151	333 Linden Ave., Dayton, OH 45403.
4-7550	4166 Boston Rd., Bronx, NY 10475.
2-6800	205 Main St., Lodi, NJ 07644.
-2214	P. O. Box 2316, High Point, NC 27261.
-5500	1313 N. Market St., Wilmington, DE 19894.
-3950	7247 N. Central Park Ave., Skokie, IL 60076.
-5000	340 Kingsland St., Nutley, NJ 07110.
-0881	414 Wilson Ave., Newark, NJ 07105.
-4000	Madison & Van Buren Aves., Valley Forge, PA 19482.
-1800	P. O. Box 250, S. Plainfield, NJ 07080.
-0012	P. O. Box 325, N. Haven, CT 06473-0325.
-6000	One Wellington Rd., Lincoln, RI 02865.
-8100	970 E. Tipton St., Huntington, IN 46750.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
KPT	Koppers Co., Inc	412-227-2000	Koppers Bldg., K-1050, 10th Fl., Pittsburgh, PA 15219.
LCP	LCP Chemicals:		
	Maine	201-225-4840	P. O. Box 149, Orrington, ME 04474.
	West Virginia, Inc	304-843-1310	P. O. Box Box J, Moundsville, WV 26041.
LTV	LTV Steel Co., Inc	216-622-5000	LTV Steel Bldg., 25 W. Prospect Ave., Cleveland, OH 44115.
LKY	Lake States Div. of Rhinelander Paper Co.	715-369-4356	515 W. Davenport St., Rhinelander, WI 54501.
LUR	Laurel Products Corp	215-423-5300	2600 E. Tioga St., Philadelphia, PA 19134.
LII	Lawter International, Inc	312-498-4700	990 Skokie Blvd., Northbrook, IL 60062.
LEA	Leatex Chemical Co.	215-739-6324	2722 N. Hancock St., Philadelphia, PA 19133.
LLI	Lee Laboratories, Inc	804-862-2534	P. O. Box 1658, Petersburg, VA 23805.
SAR	Leksi, Inc	215-521-3800	P. O. Box 56, Essington, PA 19029.
LEV	Lever Brothers Co	212-906-6000	390 Park Ave., New York, NY 10022.
LVR	C. Lever Co., Inc	215-639-8640	736 Dunks Ferry Rd., Bensalem, PA 19020.
LIL	Eli Lilly & Co., Inc	317-261-2000	307 E. McCarthy St., Indianapolis, IN 46285.
	Eli Lilly Industries, Inc	809-757-4150	Call Box 1198 - Pueblo Station, Carolina, PR 00628-1198.
LIC	Lilly Industrial Coatings, Inc	317-634-8512	P. O. Box 946, Indianapolis, IN 46206.
BRD	Lonza, Inc	201-794-2400	22-10 Route 208, Fair Lawn, NJ 07410.
LC	Lord Corp., Chemical Products Group	814-868-3611	2000 W. Grandview Blvd., P. O. Box 10038, Erie, PA 16514-0038.
LAS	Los Angeles Soap Co	213-627-5011	617 E. 1st St., P. O. Box 2198 T.A., Los Angeles, CA 90012.
LCS	Louisiana Chemical Specialties, Inc	504-775-1801	12537 Scenic Hwy., Baton Rouge, LA 70807.
MAK	MAK Chemical Corp	317-288-4464	1200 Rochester Ave., P. O. Box 2423, Muncie, IN 47302.
MET	M & T Chemicals, Inc	201-499-0200	P. O. Box 889, Laurens, SC 29360.
SOR	MW Manufacturers, Southern Resin Div	703-483-0211	P. O. Box 68, Thomasville, NC 27360.
MCK	MacKenzie Chemical Works, Inc	516-234-8600	1 Cordello Ave., Central Islip, NY 11722.
TZC	Magnesium Elektron, Inc	201-782-5800	R.D. #2, Box 251, Flemington, NJ 08822.
MGR	Magruder Color Co., Inc	201-242-1300	1029 Newark Ave., Elizabeth, NJ 07201.
MAL	Mallinckrodt, Inc	314-895-2000	675 McDonnell Blvd., P. O. Box 5480, St. Louis, MO 63134.
MOR	Marathon Morco Co	713-337-1534	P. O. Drawer C, Dickinson, TX 77539.
MOC	Marathon Petroleum Co., Texas Refining Div.	419-422-2121	539 S. Main St., Findlay, OH 45840.
MRD	Marden-Wild Corp	617-666-0400	500 Columbia St., P.O. Box 499, Somerville, MA 02143.
MRV	Marlowe-Van Loan Corp	919-886-7126	1511 Joshua Circle, P. O. Box 1851, High Point, NC 27261.
MCA	Masonite Corp., Alpine Div	601-863-5772	P. O. Box 2392, Gulfport, MS 39505.
MYO	Mayo Chemical Co	404-696-6711	5544 Oakdale Rd., Smyrna, GA 30080.
MZC	Mazer Chemical, Inc	312-244-3410	3938 Porett Dr., Gurnee, IL 60031.
MCC	McCloskey Varnish Co	215-624-4400	7600 State Rd., Philadelphia, PA 19136.
MCC	McCloskey Varnish Co. of the N.W	503-226-3751	4155 N.W. Yeon Ave., Portland, OR 97210.
MCC	McCloskey Varnish Co. of the West	213-726-7272	5501 W. Slauson, Commerce, CA 90040.
STG	McCormick & Co., Inc., McCormick-Stange, Flavor Div.	301-667-7171	230 Schilling Circle S., Hunt Valley, MD 21031.
MGK	McLaughlin Gormley King Co	612-544-0341	8810 - 10th Ave., N., Minneapolis, MN 55427.
MNP	McWhorter, Inc	312-428-2657	400 E. Cottage Place, Carpentersville, IL 60110.
MLC	Melamine Chemicals, Inc	504-473-3121	P. O. Box 748, Donaldsonville, LA 70346.
MRK	Merck & Co., Inc	201-574-4000	P. O. Box 2000, Rahway, NJ 07065.
MER	Merichem Co	713-455-1311	1914 Haden Rd., Houston, TX 77015.
MLS	Miles Laboratories, Inc., Biotechnology Group.	219-262-7445	P. O. Box 932, Elkhart, IN 46515.
MIL	Milliken & Co., Milliken Chemical Co	803-472-9041	P. O. Box 817, Inman, SC 29349.
RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.	212-687-2757	Coronet Dr., Dalton, GA 30720.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
MMM	Minnesota Mining & Manufacturing Co	612-736-0940	3M Center 224-6SE, St. Paul, MN 55144.
MIR	Miranol Chemical Co., Inc	201-329-3900	P. O. Box 436, Dayton, NJ 08810.
MSC	Mississippi Chemical Corp	601-746-4131	P. O. Box 388, Yazoo City, MS 39194.
	Mobay Chemical Corp.:		
CHG	Agricultural Chemicals Div	816-242-2345	P. O. Box 4913, Hawthorne Rd., Kansas City, MO 64120
VPC	Dye & Pigment Div	201-686-3700	P. O. Box 385, Union, NJ 07083.
MOB	Pittsburgh Div	412-777-2000	Penn Lincoln Pkwy. W., Pittsburgh, PA 15205.
SM	Mobil Oil Corp.:		
	Gas Liquids Dept	703-849-3000	P. O. Box 900, Dallas, TX 75221.
	Mobil Chemical Co	201-262-9030 804-798-2288	P. O. Box 726, Paramus, NJ 07652 and P. O. Box 26683, Richmond, VA 23261.
	Chemical Coatings Div	201-321-6000	P. O. Box 250, Edison, NJ 08818.
	Petrochemicals Div	713-590-7700	World Tower One, 15600 Drummit Blvd., Houston, TX 77032.
MOA	Mona Industries, Inc	201-345-8220	76 E. 24th St., Paterson, NJ 07544.
MON	Monsanto Co	314-694-1000	800 N. Lindberg Blvd., St. Louis, MO 63167.
MCI	Mooney Chemicals, Inc	216-781-8383	2301 Scranton Rd., Cleveland, OH 44113.
MCP	Moretex Chemical Products, Inc	803-583-8441	314 W. Henry St., Spartanburg, SC 29304.
MRF	Morflex Chemical Co., Inc	919-292-1781	2110 High Point Road, Greensboro, NC 27403.
	Morton Thiokol, Inc.:		
CCW	Carstab Div	513-733-2100	West St., Reading, OH 45215.
MRT	Morton Chemical Div	312-621-5555	2 N. Riverside Plaza, Chicago, IL 60606.
TCI	Texize Div	803-963-4261	P. O. Box 368, Greenville, SC 29602.
MHI	Ventron Div	617-774-3100	150 Andover St., Danvers, MA 01923.
MOT	Motomco, Ltd	608-244-2904	P. O. Box 8422, Madison, WI 53708.
PNX	The Murphy-Phoenix Co	216-831-0404	P. O. Box 22930, Beechwood, OH 44122.
NTL	NL Industries, Inc	212-621-9400	1230 Avenue of the Americas, New York, NY 10020.
CHN	N-Ren Corp., Cherokee Nitrogen Div	800-543-6736	P. O. Box 429, Pryor, OK 74362.
LEM	Napp Chemicals, Inc	201-773-3900	199 Main St., Lodi, NJ 07644.
NTC	National Casein Co	312-846-7300	601 W. 80th St., Chicago, IL 60620.
NCJ	National Casein of New Jersey	609-829-1880	P. O. Box 226, Riverton, NJ 08077.
USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co	513-530-6500	11500 N. Lake Dr., P. O. Box 429550, Cincinnati, OH 45249.
NMC	National Milling & Chemical Co	215-482-6600	4601 Flat Rock Rd., Philadelphia, PA 19127.
NSC	National Starch & Chemical Corp	201-685-5000	10 Finderne Ave., Bridgewater, NJ 08807.
NTS	National Steel Corp., Great Lakes Plant.	313-297-3601	1 Quality Dr., Ecorse, MI 48229.
NEP	Nepera, Inc	914-782-8171	Route #17, Harriman, NY 10926.
NVM	Nevamar Corp	301-569-5000	8339 Telegraph Rd., Odenton, MD 21113.
NEV	Neville Chemical Co	412-331-4200	Grand Avenue, Neville Island, Pittsburgh, PA 15225.
NCC	Niacet Corp	716-285-1474	400 - 47th St., Niagara Falls, NY 14304.
NLO	Niklor Chemical Co., Inc	213-830-2253	2060 E. 220th St., Long Beach, CA 90810.
NCP	Niles Chemical Paint Co	616-683-3377	P. O. Box 307, Niles, MI 49120.
	Kordell Industries Div	219-255-9678	P. O. Box 930, Mishawaka, IN 46544.
CNP	Nipro, Inc	404-823-4000	P. O. Box 1483(13), Augusta, GA 30913.
NOC	The Norac Co., Inc	818-334-2908	405 S. Motor Ave., Azusa, CA 91702.
	Mathe Div	201-779-4981	169 Kennedy Dr., P. O. Box 2230, Lodi, NJ 07644.
FSN	NOR-AM Chemical Co	302-575-2000	3509 Silverside Road, P. O. Box 7495, Wilmington, DE 19803.
LMI	North American Chemical Co	617-686-2907	19 S. Canal St., Lawrence, MA 01843.
NWP	Northern Petrochemical Co	402-633-5735	Two Center Park Plaza, Norchem Center, Omaha, NB 68102.
NW	Northwestern Chemical Co	312-231-6111	120 N. Aurora St., West Chicago, IL 60185.
NPC	Northwest Petrochemical Corp	206-293-3176	P. O. Box 99, Anacortes, WA 98221.
NOR	Norwich Eaton Pharmaceutical, Inc	607-335-2111	17 Eaton Ave., Norwich, NY 13815.
NBI	Novo Biochemical Industries Inc	919-494-2014	P. O. Box 576, Franklinton, NC 27525.
NOD	Nuodex, Inc	201-981-5000	P. O. Box 365, Turner Place, Piscataway, NJ 08854.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTI- FICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
NUT	Nutrius, Inc	216-526-5522	8221 Brecksville Rd., Brecksville, OH 44141.
OBC	The O'Brien Corp	415-761-2300	450 E. Grand Ave., S. San Francisco, CA 94080.
	Occidental Chemical Corp.:		
HKD	Durez Div	716-696-6000	Walck Rd., N. Tonawanda, NY 14120.
HK	Industrial & Specialty Chemical Div	716-286-3000	360 Rainbow Blvd. S., Niagara Falls, NY 14303.
HKP	PVC Div	215-327-6400	P. O. Box 699, Pottstown, PA 19464.
OMC	Olin Corp	203-356-2000	120 Long Ridge Rd., Stamford, CT 06904.
ONX	Onyx Chemical Co	201-434-1700	190 Warren St., Jersey City, NJ 07302.
OPC	Orbis Products Corp	201-334-1600	94 Fanny Rd., Boonton, NJ 07005.
ORG	Organics/LaGrange, Inc	312-764-6700	7125 N. Clark St., Chicago, IL 60626.
OCC	Orient Chemical Corp	201-465-0714	121 Tyler St., Port Newark, NJ 07114.
BSW	Original Bradford Soap Works, Inc	401-821-2141	200 Providence St., W. Warwick, RI 02893.
CJO	C. J. Osborn Chemicals, Inc	609-662-0128	820 Sherman Ave., Pennsauken, NJ 08110.
OCF	Owens-Corning Fiberglas Corp	419-248-8000	Fiberglas Tower, Toledo, OH 43659.
PBI	PBI-Gordon Corp	816-421-4070	1217 W. 12th St., Kansas City, MO 64101-9984.
PMP	PMP Fermentation Products, Inc	414-347-7467	917 W. Juneau Ave., P. O. Box 766, Milwaukee, WI 53201.
PPG	PPG Industries, Inc.	412-434-3131	PPG Place, Pittsburgh, PA 15272.
PAC	Pacific Anchor Chemical Corp	213-725-1800	6055 E. Washington Blvd., Suite 700, Los Angeles, CA 90040.
PNT	Pantasote, Inc., Film/Compound Div	201-777-8500	26 Jefferson St., Passaic, NJ 07055.
PAH	Parish Chemical Co	801-226-2018	145 N. Geneva Rd., Orem, UT 84057.
PD	Parke-Davis Div. of Warner Lambert Co	201-540-2000	188 Howard Ave., Holland, MI 49423.
PSC	Passaic Color & Chemical Co	201-279-0400	28-36 Paterson St., Paterson, NJ 07501.
CHP	C. H. Patrick & Co., Inc	803-244-4831	P. O. Box 2526, Greenville, SC 29602.
PEL	Pelron Corp	312-442-9100	7847 W. 47th St., Lyons, IL 60534.
PAS	Pennwalt Corp	215-587-7000	Three Parkway, Philadelphia, PA 19102.
WTL	Lucidol Div	716-877-1740	1740 Military Rd., Buffalo, NY 14240.
PAR	Pennzoil Co., Penreco Div	412-283-5600	Union Bank Bldg. Butler, PA 16001.
PKI	Perkins Industries, Inc	913-677-5831	6405 Metcalf St., Suite 422, Overland Park, KS 66202.
PER	Perry & Derrick Co., Inc	513-351-5800	2510 Highland Ave., Cincinnati, OH 45212.
PST	Perstorp Compounds, Inc	413-584-2472	238 Nonotuck St., Florence, MA 01060.
PST	Perstorp Polyols, Inc	419-729-5448	600 Matzinger Rd., Toledo, OH 43612.
PTT	Petro-Tex Chemical Corp	713-477-9211	8600 Park Place Blvd., Houston, TX 77017.
PFN	Pfanstiehl Laboratories, Inc	312-623-0370	1219 Glen Rock Ave., Waukegan, IL 60085.
PCW	Pfister Chemical, Inc	201-945-5400	Linden Ave., Ridgefield, NJ 07657.
PFZ	Pfizer, Inc	212-573-2323	235 E. 42d St., New York, NY 10017.
	Pfizer Pharmaceuticals, Inc	809-846-4300	P. O. Box 628, Barceloneta, PR 00617.
PHR	Pharmachem Corp	215-867-4654	719 Stefko Blvd., Bethlehem, PA 18016.
PLB	Pharmacia P-L Biochemicals, Inc	414-225-2600	2202 N. Bartlett Ave., Milwaukee, WI 53202.
PDI	Phelps Dodge Industries, Inc., Phelps Dodge Magnet Wire Co. Div.	219-456-4444	1302 E. Creighton Ave., Fort Wayne, IN 46801.
PPX	Phillips Paraxylene, Inc	809-864-1515	G. P. O. Box 4129, San Juan, PR 00936.
PLC	Phillips Petroleum Co	918-661-6600	15 Al Phillips Bldg., Bartlesville, OK 74004.
PPR	Phillips Puerto Rico Core, Inc	809-864-1515	G .P. O. Box 4129, San Juan, PR 00936.
PHC	Phthalchem, Inc	513-681-0099	6675 Beechland Dr., Cincinnati, OH 45237.
PCI	Piedmont Chemical Industries, Inc	919-885-5131	331 Burton Ave., High Point, NC 27260.
PIC	Pierce Chemical Co	815-968-0747	3747 N. Meridan Rd., Rockford, IL 61103.
PIL	Pilot Chemical Co	213-723-0036	11736 Burke St., Santa Fe Springs, CA 90670.
PPL	Pioneer Plastics Div. of LOF Plastics, Inc.	207-784-9111	Pionite Rd., Auburn, ME 04210.
PKL	Plaskolite, Inc	614-294-3281	1770 Joyce Ave., P. O. Box 1497, Columbus, OH 43216.
PSL	Plaslok Corp	716-681-7755	3155 Broadway, Buffalo, NY 14227.
PLS	Plastics Engineering Co	414-458-2121	3518 Lakeshore Rd., Sheboygan, WI 53081.
PMC	Plastics Manufacturing Co	214-330-8671	2700 S. Westmoreland, Dallas, TX 75223.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
SYP	Plastics Specialties & Technologies, Inc., Synthetic Products Co.	216-531-6010	16601 St. Clair Ave., Cleveland, OH 44110.
PLX	Plex Chemical Corp	415-471-6555	1205 Atlantic St., Union City, CA 94587.
PTC	Polycast Technology Corp	203-327-6010	69 Southfield Ave., Stamford, CT 06902.
PAI	Polymer Applications, Inc	716-875-0775	3445 River Rd., Tonawanda, NY 14150.
PYI	Polymer Industries	803-244-5351	P. O. Box 2184, Roberts Rd., Greenville, SC 29602.
PYZ	Polyrez Co., Inc	609-845-1813	P. O. Box 304, Woodbury, NJ 08096.
PLR	Polysar, Inc.:		
	Latex Div	216-836-0451	1795 W. Market St., Akron, OH 44313.
	Resins Div	671-537-9901	29 Fuller St., Leominster, MA 01453.
PVI	Polyvinyl Chemical Industries	617-658-6600	730 Main St., Wilmington, MA 01887.
POP	Pope Chemical Corp	201-279-2702	33 - 6th Ave., Paterson, NJ 07524.
PRT	Pratt & Lambert, Inc	716-873-6000	75 Tonawanda, Buffalo, NY 14207.
JLP	J. L. Prescott Co	201-777-4200	27 - 8th St., Passaic, NJ 07055.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.	513-627-5194	P. O. Box 599, Cincinnati, OH 45201.
PRC	Products Research & Chemical Corp	818-240-2060	5430 San Fernando Rd., P. O. Box 1800, Glendale, CA 91209.
PRX	Purex Corp	213-630-7487	5101 Clark Ave., Lakewood, CA 90712.
QCP	Quaker Chemical Corp	215-828-4250	Elm & Lee Sts., Conshohocken, PA 19428-0809.
QKO	QO Chemicals, Inc	312-850-2359	823 Commerce Dr., Suite 200, Oak Brook, IL 60521.
QUN	K. J. Quin & Co., Inc	617-321-3200	195 Canal St., Malden, MA 02148.
QN	Quintana Petrochemical Co	512-289-2600	5441 Up River Rd., Corpus Christi, TX 78469.
RSA	R.S.A. Corp	914-693-1818	690 Saw Mill River Rd., Ardsley, NY 10502.
RCN	Racon, Inc	316-524-3245	6040 S. Ridge Rd., P. O. Box 198, Wichita, KS 67201.
RAS	Raffi and Swanson, Inc	617-933-4200	100 Eames St., Wilmington, MA 01887.
RAB	Raymark Corp	203-371-0101	1204 Darlington Ave., Crawfordsville, IN 47933.
MAR	Reed Lignin, Inc	203-625-0710	81 Holly Hill Lane, Greenwich, CT 06830.
RBI	Reeves Brothers, Inc	803-576-1210	P. O. Box 1898, Spartanburg, SC 29304.
REG	Regis Chemical Co	312-967-6000	8210 Austin Ave., Morton Grove, IL 60053.
RCI	Reichhold Chemicals, Inc	914-682-5700	525 N. Broadway, White Plains, NY 10603.
RIL	Reilly Tar & Chemical Corp	317-247-8141	1510 Market Square Center, 151 N. Delaware St., Indianapolis, IN 46204.
REL	Reliance Universal, Inc., Louisville Resins Operation.	502-459-9110	P. O. Box 37510, Louisville, KY 40232.
REM	Remington Arms Co., Inc	203-333-1112	939 Barnum Ave., Bridgeport, CT 06601.
RNL	Resinall Corp	203-329-7100	3065 High Ridge Rd., Stamford, CT 06903.
RDA	Rhone-Poulenc, Inc	201-846-7700	120 Jersey Ave., New Brunswick, NJ 08903.
RCD	Richardson Polymer Corp	203-245-0441	15 Meigs Ave., Madison, CT 06443.
AMS	Ridgway Color Co	814-776-2151	75 Front St., Ridgway, PA 15853.
RTC	Riegel Textile Corp., Riechem Div	803-242-6050	Sparks Ave., Ware Shoals, SC 29692.
RIK	Riker Laboratories, Inc. Sub. of 3M Co.	818-341-1300	19901 Nordhoff St., Northridge, CA 91324.
RSN	Rilsan Corp	201-447-3300	139 Harristown Rd., Glen Rock, NJ 07452.
RT	Ritter International	213-245-6886	4001 Goodwin Ave., Los Angeles, CA 90039.
RIV	Riverdale Chemical Co	312-756-2010	220 E. 17th St., Chicago Heights, IL 60411.
ROB	Robeco Chemicals, Inc	212-986-6410	99 Park Ave., New York, NY 10016.
ORT	Roehr Chemicals, Inc	718-784-8473	52-20 - 37th St., Long Island City, NY 11101.
RH	Rohm & Haas Co	215-592-3000	Independence Mall West., Philadelphia, PA 19105.
ROM	Roma Color, Inc	617-676-3481	749 Quequechan St., P. O. Box 149, Fall River, MA 02722.
RUC	Rubicon, Inc	302-575-3596 504-673-6141	P. O. Box 751, Wilmington, DE 19897 and P. O. Box 517, Geismar, LA 70734.
RUO	Ruco Polymer Corp	516-931-8104	New South Rd., Hicksville, NY 11802.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
NES	Ruetgers-Nease Chemical Co	814-238-2424	201 Struble Rd., College, PA 16801.
SCM	SCM Corp.:		
	Coatings & Resins Div	216-344-8000	925 Euclid Ave., Cleveland, OH 44115.
	Organic Chemicals Div	904-764-1711	P. O. Box 389, Jacksonville, FL 32201.
	PCR, Inc	904-764-1711	P. O. Box 389, Jacksonville, FL 32201.
SDS	S.D.S. Biotech Corp	216-357-3000	7528 Auburn Rd., P. O. Box 348, Painesville, OH 44077.
SOS	SSC Industries, Inc	404-762-9651	1550 E. Taylor Ave., East Point, GA 30344.
WPR	Safeway Stores, Inc	415-944-4400	2800 Ygnacio Valley Rd., Walnut Creek, CA 94598.
STX	St. Croix Petrochemical Corp	809-773-6400	P. O. Box 6801, Christiansted, St. Croix, U.S., VI 00820.
SLM	Salem Oil & Grease Co	617-745-0585	60 Grove ST., Salem, MA 01970.
SAL	Salsbury Laboratories, Inc	515-257-2422	2000 Rockford Rd., Charles City, IA 50616.
SBG	Samuel Bingham Co	312-298-6777	11101 W. Franklin Ave., Franklin Park, Il 60131.
SDC	Sandoz Chemicals Corp	704-372-0120	4000 Monroe Rd., Charlotte, NC 28211.
S	Sandoz, Inc., Colors & Chemicals Div	704-372-0210	Route #10, East Hanover, NJ 07936.
SCN	Schenectady Chemicals, Inc	518-370-4200	P. O. Box 1046, Schenectady, NY 12306.
SBC	Scher Chemicals, Inc	201-471-1300	1 Styertowne Rd., P. O. Box 1236, Clifton, NJ 07012.
SCH	The Schering Corp	201-558-4000	1011 Morris Ave., Union, NJ 07083.
SCO	Scholler, Inc	215-739-0900	P. O. Box 26968, Philadelphia, PA 19134.
SPR	Scientific Protein Laboratories	608-849-5944	P. O. Box 158, Waunakee, WI 53597.
SPA	Scott Paper Co	215-521-5000	P. O. Box 925, Everett, WA 98206.
SEA	Seaboard Chemicals, Inc	617-745-1915	30 Foster St., P. O. Box 707, Salem, MA 01970.
SRL	G. D. Searle & Co	312-982-7000	5200 Old Orchard Rd., Skokie, IL 60076.
SFR	Searle Food Resources, Inc	312-982-7000	4711 Golf Rd., Skokie, IL 60076.
SKP	Shakespeare Co., Monofilament Div	803-754-7011	P. O. Box 4060, Columbia, SC 29204.
SHO	Shell Oil Co	713-241-5105	P. O. Box 3105, Houston, TX 77002.
SHC	Shell Chemical Co	713-241-5105	P. O. Box 3105, Houston, TX 77002.
SGO	Shenango, Inc	412-771-4400	200 Neville Rd., Pittsburgh, PA 15225.
SHP	Shepherd Chemical Co	513-731-1110	4900 Beech St., Cincinnati, OH 45212.
SHX	Sherex Chemical Co., Inc	614-764-6500	P. O. Box 646, Dublin, OH 43017.
	The Sherwin-Williams Co.:		
SW	Chemical Div	216-566-2000	101 Prospect Ave. NW., Cleveland, OH 44115.
BAL	Consumer Div	301-837-3030	2325 Hollins Ferry Rd., Baltimore, MD 21230.
SHT	Shintech, Inc	713-965-0713	24 Greenway Plaza, Suite 811, Houston, TX 77046.
SMP	J. R. Simplot Co	208-336-2110	P. O. Box 912, Pocatello, ID 83204.
SIM	Simpson Timber Co	503-289-1111	2301 N. Columbia Blvd., Portland, OR 97217.
GFS	G. Frederick Smith Chemical Co	614-881-5501	P. O. Box 23214, Columbus, OH 43223.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.	215-270-7000	P. O. Box 900, 900 River Rd., Conchohocken, PA 19428.
SOH	Sohio Chemical Co	216-575-4141	Midland Bldg., 101 W. Prospect, Cleveland, OH 44115.
SIC	Silmar Div	213-757-5141	12333 S. Van Ness Ave., Hawthorne, CA 90250.
SLT	Soltex Polymer Corp	713-522-1781	P. O. Box 1000, Deer Park, TX 77536.
SLC	Soluol Chemical Co., Inc	401-821-8100	Green Hill & Market Sts., P. O. Box 112, W. Warwick, RI 02893.
SAC	Southeastern Adhesives Co	704-754-3493	8150 Virginia St. SW., Lenoir, NC 28645.
SOP	Southern Chemical Products Co	912-746-5147	430 Lower Boundary St., Macon, GA 31202.
	Southland Corp.:		
ACT	Chemical Div	312-458-8450	7666 W. 63d St., Summit, IL 60501.
SOL	Fine Chemical Div	214-828-7011	2828 N. Haskell Ave., Dallas, TX 75204.
SWR	Southwestern Refining Co., Inc	512-884-8863	P. O. Box 9217, Corpus Christi, TX 78469.
SPL	Spaulding Fibre Co., Inc., Industrial Plastics Div.	716-692-2000	310 Wheeler St., Tonawanda, NY 14150.
ASL	Specialty Chemical Products Corp	715-735-9033	2 Stanton St., Marinette, WI 54143.
SOI	Specialty Organics, Inc	818-962-2008	5623 N. 4th St., Irwindale, CA 91706.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
IPP	Spectrachem Corp	201-595-8181	200 Sheridan Ave., Paterson, NJ 07502.
TRD	Squibb Manufacturing, Inc	809-852-1255	P. O. Box 609, Humacao, PR 00661.
SCC	Standard Chlorine of Delaware, Inc	201-997-1700	1015 Belleville Turnpike, Kearny, NJ 07032.
AMO	Standard Oil Company (Indiana)	312-856-6111	P. O. Box 5910-A, Mail Code 1201, Chicago, IL 60680.
SIO	Standard Oil (Ohio)	216-575-4141	101 Prospect Ave., Cleveland, OH 44115.
	Stauffer Chemical Co.:		
SFA	Agricultural Div	415-544-9000	636 California St., San Francisco, CA 94108.
SFC	Calhio Chemicals, Inc	415-544-9000	636 California St., San Francisco, CA 94108.
SFI	Chlor Alkali Products	415-544-9000	636 California St., San Francisco, CA 94108.
SFF	Food Ingredients Div	415-544-9000	636 California St., San Francisco, CA 94108.
SFS	Specialty & Intermediates Div	415-544-9000	636 California St., San Francisco, CA 94108.
SWS	SWS Silicones Div	415-544-9000	636 California St., San Francisco, CA 94108.
STP	Stepan Chemical Co	312-273-3950 312-446-7500	RR #1, Elwood, IL 60421 and 100 W. Henter Ave., Maywood, NJ 07607.
SD	Sterling Drug, Inc	212-907-2000	2144 E. State St., Trenton, NJ 08619.
SDH & TMS	Hilton Davis Chemical Co	513-841-4000	2235 Langdon Farm Rd., Cincinnati, OH 45237.
SDW	Sterling Organics Div	212-907-2000	90 Park Ave., New York, NY 10016.
SD	Sterling Pharmaceuticals, Inc	212-907-2000	P. O. Box 11247, Barcelonita, PR 00617.
CIN	Stockhausen, Inc	919-378-9393	P. O. Box 16025, Greensboro, NC 27406.
SBP	Sugar Beet Products Co.	517-799-4941	302 Waller St., P. O. Box 1387, Saginaw, MI 48605.
	Sun Chemical Corp.:		
SNW	Chemicals Div	201-224-4600	P. O. Box 70, Chester, SC 29706.
SNA	Pigments Div	212-986-5500	411 Sun Ave., Cincinnati, OH 45232.
SUN	Sun Company, Inc	215-293-6618	100 Matsonford Rd., Radnor, PA 19087.
SNO	SunOlin Chemical Co	302-792-3100	P. O. Box F, Claymont, DE 10703.
IOC, JSC & TCC	Sybron Chemical, Inc	609-893-1100	P. O. Box 66, Birmingham Rd., Birmingham, NJ 08011.
SYL	Sylvachem Corp	904-764-1711	P. O. Box 690, Jacksonville, FL 32218.
INP	Synair Corp	615-698-8801	2003 Amnicola Hwy., P. O. Box 5269, Chattanooga, TN 37406.
BUC	Synalloy Corp., Blackman Uhler Chemical Div.	803-585-3661	P. O. Box 5627, Craft Industrial Park, Spartanburg, SC 29304.
SRY	Synray Corp	201-245-2600	209 N. Michigan Ave., Kenilworth, NJ 07033.
HFT	Syntex Agribusiness, Inc	417-866-7192	P. O. Box 1246 S.S.S., Springfield, MO 65805.
ARA	Syntex Chemicals, Inc	303-443-1926	2075 N. 55th St., Boulder, CO 80302.
SYT	Synthron, Inc	704-437-8611	P. O. Box 1111, Morganton, NC 28655.
TEK	Teknor Apex Co	401-725-8000	505 Central Ave., Pawtucket, RI 02861.
TLI	Teledyne Industries, Inc., Teledyne McCormick Selph.	408-637-3731	3601 Union Rd., Hollister, CA 95024-8006.
TOC	Tenneco Oil Co	713-757-2635	P. O. Box 2511, Houston, TX 77001.
HN	Tenneco Polymers, Inc	713-475-5000	1149 Ellsworth Dr., Pasadena, TX 77501.
TEN	Tennessee Chemical Co	615-496-3331	Copperhill, TN 37317.
TVA	Tennessee Valley Authority TVA, OACD, Div. of Chemical Operations, A-204 NFDC.	205-386-2377	Muscle Shoals, AL 35660.
TU	Tenn-USS Chemicals Co	713-884-4400	P. O. Box 600, Pasadena, TX 77501.
TER	Terra Chemicals International, Inc	712-277-1340	Terra Centre, 600 - 4th St., Sioux City, IA 51101.
TER	Terra Nitrogen, Inc	712-277-1340	Terra Centre, 600 - 4th St., Sioux City, IA 51101.
COO	The Terrell Corp	616-658-3351	820 Woburn St., Wilmington, MA 01887.
TX	Texaco, Inc., Texaco Chemical Co	713-666-8000	4800 Fournace Place, Bellaire, TX 77401.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTI-FICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
TUS	Texaco Butadiene Co	713-666-8000	P. O. Box 430, Bellaire, TX 77401.
SKO	Texaco Refining & Marketing, Inc	918-560-6000	P. O. Box 1650, Tulsa, OK 74102.
TID	Delaware Refinery	713-650-4642	Delaware City, DE 19706.
TSA	Texas Alkyls, Inc	713-479-8411	P. O. Box 600, Deer Park, TX 77536.
TCR	Texas City Refining, Inc	409-945-4451	P. O. Box 1271, Texas City, TX 77592-1271.
TPC	Texas Petrochemicals Corp	713-477-9211	8600 Park Place Blvd., Houston, TX 77017.
TXS	Texstyrene Plastics, Inc	817-831-0533	3607 N. Sylvania Ave., Fort Worth, TX 76111.
SKT	Textron, Inc., Spencer Kellogg Div	716-852-5850	120 Delaware Ave., Buffalo, NY 14240.
TMH	Thompson Hayward Chemical Co	913-321-3131	5200 Speaker Rd., Kansas City, MO 66106.
TRI	Triad Chemical	504-473-9231	P. O. Box 310, Donaldsonville, LA 70346.
TRO	Troy Chemical Co	201-589-2500	One Avenue L, Newark, NJ 07105.
TUL	Tull Chemical Co., Inc	205-831-1154	P. O. Box 3246, Oxford, AL 36203.
TLC	Twin Lake Chemical, Inc	716-433-3824	540 Hill St., P. O. Box 411, Lockport, NY 14094.
UPM	UOP, Inc., UOP Process Div	312-391-2000	20 UOP Plaza, Des Plaines, IL 60016.
UHL	Paul Uhlich & Co., Inc	914-478-2000	1 Railroad Ave., Hastings-on-Hudson, NY 10706.
UNG	Ungerer & Co	201-628-0600	4 Bridgewater Lane, Lincoln Park, NJ 07035.
WTH	Union Camp Corp	201-628-9000	P. O. Box 220, Dover, OH 44622.
NCI	Chemical Products Div	201-628-2000	1600 Valley Rd., Wayne, NJ 07470.
NCI	Terpene & Aromatics Div	201-628-2000	P. O. Box 60369, Jacksonville, FL 32236.
UCC	Union Carbide Corp	304-747-0001	P. O. Box 8004, S. Charleston, WV 25303.
UOC	Union Oil Co. of California	213-977-7746	461 S. Boylston St., Los Angeles, CA 90017.
USR	Uniroyal, Inc., Chemical Group	203-723-3887	World Headquarters, Middlebury, CT 06749
UNN	United Chemical Corp. of Norwood	617-762-4057	P. O. Box 367, Endicott St., Norwood, MA 02062.
UNO	United Erie, Inc	814-456-7561	438 Huron St., Erie, PA 16502.
VAL	United Merchants & Manufacturers, Inc., Valchem Div.	201-837-1700	1650 Palisades Ave., Teaneck, NJ 07666.
USB	U.S. Borax & Chemical Corp., U.S Borax Research Corp.	213-381-5311	3075 Wilshire Blvd., Los Angeles, CA 90010.
USP	U.S. Polymers, Inc	314-638-1632	300 E. Primm St., St. Louis, MO 63111.
USS	U.S. Steel Corp.:		
	Clairton Plant	412-433-1121	600 Grant St., Rm. 2316, Pittsburgh, PA 15230.
	Fairfield Plant	412-433-1121	600 Grant St., Rm. 2316, Pittsburgh, PA 15230.
	Gary Works	412-433-1121	600 Grant St., Pittsburgh, PA 15230.
	Geneva Plant	412-433-1121	600 Grant St., Rm. 1937, Pittsburgh, PA 15320.
ARM	USS Agri-Chemicals Div	404-572-4000	P. O. Box 1685, Atlanta, GA 30301.
	USS Chemicals Div	412-433-7636	600 Grant St., Rm. 2880, Pittsburgh, PA 15230.
UPJ	The Upjohn Co	616-323-4000	7000 Portage Rd., Kalamazoo, MI 49001 and 555 Alaska Ave., Torrance, CA 90503.
CWN	Fine Chemicals	203-281-2722	410 Sackett Point Rd., North Haven, CT 06473.
	Polymer Chemical Div	713-479-1541	P. O. Box 685, LaPorte, TX 77571.
VSV	Valentine Sugars, Inc., Valite Div	504-532-2541	Rt 2, Box 625, Lockport, LA 70374.
VSP	The Valspar Corp	612-332-7371	1101 S. 3d St., P. O. Box 1461, Minneapolis, MN 55440.
VDM	Van De Mark Chemical Co., Inc	716-433-6764	1 N Transit Rd., Lockport, NY 14094.
VNC	Vanderbilt Chemical Corp	203-744-3900 203-853-1400	31 Taylor Ave., P. O. Box 20, Bethel, CT 06801 and Rt. #2, Box 54, Murray, KY 42071.
VND	Van Dyk & Co., Inc	201-759-3225	Main & William Sts., Belleville, NJ 07109.
IML	Van Leer Containers, Inc	312-568-3535	4300 W. 130th St., Chicago, IL 60658.
VEL	Velsicol Chemical Corp	312-670-4500	341 E. Ohio St., Chicago, IL 60611.
VTC	Vertac Chemical Corp	901-767-6851	P. O. Box 69, Jacksonville, AR and P. O. Box 3, Rifle Range Rd., Vicksburg, MS 39180.
	West Helena Plant	501-572-3701	P. O. Box 2648, West Helena, AR 72390.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1984--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
GRL	Vestal Laboratories, Inc	314-535-1810	5035 Manchester Ave., St. Louis, MO 63110.
VIK	Viking Chemical Co	612-333-0394	838 Baker Bldg., Minneapolis, MN 55402.
VIN	Vineland Chemical Co., Inc	609-691-3535	W. Wheat Rd., Vineland, NJ 08360.
VCC	Vinings Chemical Co	404-436-1542	2555 Cumberland Pkwy., Suite 200, Atlanta, GA 30339.
VGC	Virginia Chemicals, Inc	804-483-7000	3340 W. Norfolk Rd., Portsmouth, VA 23703.
VST	Vista Chemical Co	713-531-3200	15990 N. Barker's Landing Rd., P. O. Box 19029, Houston, TX 77224.
VST	Vista Polymers, Inc	713-531-3200	15990 N. Barker's Landing Rd., P. O. Box 19029, Houston, TX 77224.
VTM	Vitamins, Inc	312-861-0700	200 E. Randolph Dr., Chicago, IL 60601.
VIT	Vititek Corp	805-725-5637	Rt. #2, P. O. Box 580, Delano, CA 93215.
FRO	Vulcan Materials Co., Chemicals Div	205-877-3000	P. O. Box 7689, Birmingham, AL 35208.
WJ	Warner-Jenkinson Co	314-658-7315	2526 Baldwin St., St. Louis, MO 63106.
WAG	West Design Chemical, Inc	913-384-4646	4350 Johnson Drive, Suite 280, Fairway, KS 66205.
WCA	West Coast Adhesives Co	503-286-3515	11104 NW Front Ave., Portland, OR 97231.
EW	Westinghouse Electric Corp., Insulating Materials Div.	412-864-7960	Manor, PA 15665.
WPG	West Point-Pepperell, Inc., Grifftex Chemical Co. Sub.	404-645-4000	1900 Cunningham Dr., Opelika, AL 36803.
WVA	Westvaco Corp., Chemical Div	212-688-5000	P. O. Box 70848, Charleston Heights, SC 29415.
WRD	Weyerhauser Co	715-384-2141	1401 E. 4th St., Marshfield, WI 54449.
WBG	The White & Bagley Co	617-791-3201	P. O. Box 706, Worcester, MA 01613.
WCC	White Chemical Corp	201-621-4100	660 Frelinghuysen Ave., Newark, NJ 07114.
WHL	Whitmover Laboratories, Inc	717-866-2151	99 S. Fairlane Ave., Myerstown, PA 17067.
WTK	Whittaker Corp., Heico Chemicals Div	717-476-0353	Rt. #11, Delaware Water Gap, PA 18327.
WHW	Whittmore-Wright Co., Inc	617-242-1180	62 Alford St., Boston, MA 02129.
WLN	Wilmington Chemical Corp	302-658-3515	P. O. Box 66, Pyles Lane, Wilmington, DE 19899.
WTC	Witco Chemical Corp	201-573-2800	155 Tice Blvd., Woodcliff Lake, NJ 07675.
HLI	Witco Chemical Corp	312-371-2000	14000 S. Seeley Ave., Blue Island, IL 60406.
WBC	Worthington Diagnostics Systems, Inc	703-893-5925	7655 Old Springhouse Rd., McLean, Va 22102.
WCL	Wright Chemical Corp	919-655-2263	P. O. Box 402, Riegelwood, NC 28456.
WYK	Wyckoff Chemical Co., Inc	616-637-8474	1421 Kalamazoo St., S. Haven, MI 49090.
WYC	Wycon Chemical Co	307-637-2700	P. O. Box 1287, Cheyenne, WY 82003.
WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.	215-644-8000	P. O. Box 831, Lancaster Pike, Paoli, PA 19301.
ZOC	Zoecon Corp	415-847-1130	P. O. Box 10975, 975 California Ave., Palo Alto, CA 94301.

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TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES

COMMON NAME	STANDARD (CHEMICAL ABSTRACTS) NAME
A Acid	3,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
Acetyl-p-phenylenediamine	4'-Aminoacetanilide.
1,2,4-Acid	4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1-Amino-2-naphthol-4-sulfonic acid).
Acid yellow 9	6-Amino-3,4'-azodibenzenesulfonic acid.
p-Aminobenzenesulfonic acid	Sulfanilic acid and salt.
m-Aminobenzoyl J acid	4-Hydroxy-7-(m-aminobenzamido)-2-naphthalenesulfonic acid.
Aminoepsilon acid	8-Amino-1,6-naphthalenedisulfonic acid.
Amino G acid	7-Amino-1,3-naphthalenedisulfonic acid.
Amino J acid	6-Amino-1,3-naphthalenedisulfonic acid.
Amino R salt	3-Amino-2,7-naphthalenedisulfonic acid.
Aniline oil	Aniline
Anthraflavic acid	2,6-Dihydroxyanthraquinone.
Anthrarufin	1,5-Dihydroxyanthraquinone.
Armstrong & Wynne's acid	4-Hydroxy-2-naphthalenesulfonic acid.
B Acid	5-Amino-4-hydroxy-1,7-naphthalenedisulfonic acid.
2B Acid	6-Amino-4-chloro-m-toluenesulfonic acid.
4B Acid	6-Amino-m-toluenesulfonic acid.
Benzal chloride	α,α-Dichlorotoluene.
Benzanthrone	7H-Benz[de]anthracen-7-one.
Benzotrichloride	α,α,α-Trichlorotoluene.
Bisphenol A	4,4'-Isopropylidenediphenol.
B.O.N.	3-Hydroxy-2-naphthoic acid.
Broenner's acid	6-Amino-2-naphthalenesulfonic acid.
Bromamine acid	1-Amino-4-bromo-2-anthraquinonesulfonic acid.
Bromobenzanthrone	3-Bromo-7H-benz[de]anthracen-7-one
C Acid	3-Amino-1,5-naphthalenedisulfonic acid.
C.A. Acid	3-Amino-6-chloro-4-sulfobenzoic acid.
C-Amine (Lake Red C acid)	2-Amino-5-chloro-p-toluenesulfonic acid.
Cassella acid	5-Hydroxy-1-naphthalenesulfonic acid.
Chicago Acid (SS acid)	4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid.
Chlorobenzanthrone	Chloro-7H-benz[de]anthracen-7-one.
Chromotropic acid	4,5-Dihydrocy-2,7-naphthalenedisulfonic acid.
Chrysazin	1,8-Dihydroxyanthraquinone.
1,6-Cleve's acid	5-Amino-2-naphthalenesulfonic acid.
1,7-Cleve's acid	8-Amino-2-naphthalenesulfonic acid.
Crocein acid	7-Hydroxy-1-naphthalenesulfonic acid.
2-Cyanopyridine	Picolinonitrile.
3-Cyanopyridine	Nicotinonitrile.
Cyanuric chloride	2,4,6-Trichloro-s-triazine.
D Acid	6-Amino-1-naphthalenesulfonic acid.
DADI	Dianisidine diisocyanate.
DDB	p-Dibutoxybenzene.
Decacyclene	Diacenaphtho[1,2-j:1',2'-ℓ]fluoranthene.
Dehydrothio-p-toluidine	2-(p-Aminophenyl)-6-methylbenzothiazole.
Developer Z	3-Methyl-1-phenyl-2-pyrazolin-5-one.
o-Dianisidine	3,3'-Dimethoxybenzidine.
1,1'-Dianthrimide	1,1'-Iminodianthraquinone.
Dibenzanthrone	Violanthrone.
Dichlone	2,3-Dichloro-1,4-naphthoquinone.
4,4'-Dihydroxydiphenylsulfone	4,4'-Sulfonyldiphenol.
Dimethyl POPOP	1,4-Bis[2-(4-methyl-5-phenyloxazolyl)]benzene.
4,5-Dinitrochrysazin	1,8-Dihydroxy-4,5-dinitroanthraquinone.
Dioxy S acid	4,5-Dihydroxy-1-naphthalenesulfonic acid.
Diphenyl Epsilon Acid	6,8-Dianilino-1-naphthalenesulfonic acid.
Durene	1,2,4,5-Tetramethylbenzene.
Epsilon Acid (Andresen's acid)	8-Hydroxy-1,6-naphthalenedisulfonic acid.
F Acid	7-Hydroxy-2-naphthalenesulfonic acid.
Fast Red G base	2-Nitro-p-toluidine [NH_2=1].
Fast Scarlet R base	5-Nitro-o-anisidine [NH_2=1].
Fischer's aldehyde	1,3,3-Trimethyl-δ^2,α-indolineacetaldehyde.
Fischer's base	1,3,3-Trimethyl-2-methyleneindoline.
Freund's acid	4-Amino-2,7-naphthalenedisulfonic acid.

TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES--CONTINUED

COMMON NAME	STANDARD (CHEMICAL ABSTRACTS) NAME
G salt	7-Hydroxy-1,3-naphthalenedisulfonic acid.
Gamma acid	6-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt.
Gold salt	9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt.
H Acid	4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid, (8-Amino-1-naphthol-3,6-disulfonic acid).
Hellimellitene	1,2,3-Trimethylbenzene.
Indoxyl	3(2H)-Indolone.
Isodurene	1,2,3,5-Tetramethylbenzene.
J Acid	7-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt.
J Acid Urea	7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid].
K Acid	4-Amino-5-hydroxy-1,7-naphthalenedisulfonic acid.
Koch's Acid	8-Amino-1,3,6-naphthalenetrisulfonic acid.
L Acid	5-Hydroxy-1-naphthalenesulfonic acid.
Lake Red C amine	2-Amino-5-chloro-p-toluenesulfonic acid.
Laurent's acid	5-Amino-1-naphthalenesulfonic acid.
M Acid	8-Amino-4-hydroxy-2-naphthalenesulfonic acid.
MEP	5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine).
Mesitylene	1,3,5-Trimethylbenzene.
Methane base	4,4'-Methylenebis[N,N-dimethylaniline].
Michler's hydrol	4,4'-Bis[dimethylamino]benzhydrol.
Michler's ketone	4,4'-Bis[dimethylamino]benzophenone.
MOCA	3,3'-Dichloro-4,4'-diaminodiphenylmethane
MVP	5-Vinyl-2-picoline.
Naphthionic acid	4-Amino-1-naphthalenesulfonic acid.
o-Naphthionic acid	1-Amino-2-naphthalenesulfonic acid.
β-Naphthol	2-Naphthol, tech.
Naphthol AS	3-Hydroxy-2-naphthanilide.
α-Naphthylamine	1-Naphthylamine.
Neville & Winther's acid	4-Hydroxy-1-naphthalenesulfonic acid.
m-Nitrobenzoyl J acid	4-Hydroxy-7-(m-nitrobenzamido)-2-naphthalenesulfonic acid.
Oxy Koch's acid	1-Naphthol-3,6,8-trisulfonic acid.
Pentaanthrimide	1,4,5,8-Tetrakis(1-anthraquinonylamino)anthraquinone.
Peri Acid	8-Amino-1-naphthalenesulfonic acid.
Phenylbiphenyl	Terphenyl.
N-Phenyldiethanolamine	2,2'-[(Phenyl)imino]diethanol.
Phenyl Gamma acid	6-Anilino-4-hydroxy-2-naphthalenesulfonic acid.
Phenyl J acid	7-Anilino-4-hydroxy-2-naphthalenesulfonic acid.
Phenyl peri acid	8-Anilino-1-naphthalenesulfonic acid.
Picric acid	2,4,6-Trinitrophenol.
POPOP	1,4-Bis[2-(5-pheyloxazolyl)]benzene.
Pseudocumene	1,2,4-Trimethylbenzene.
Pyrazoleanthrone	Anthra[1,9-cd]pyrazol-6(2H)-one.
Pyrazoleanthrone yellow	[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'-(2H,2'H)dione.
Pyrazolone T	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Quinizarin	1,4-Dihydroxyanthraquinone.
2-Quinizarinsulfonic acid	9,10-Dihydro-1,4-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid.
Quinoline yellow base	Quinophthalone.
R salt	3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt.
RG Acid (Violet acid)	4-Hydroxy-2,7-naphthalenedisulfonic acid.
Rhoduline acid (J Acid Imide)	7,7'-Iminobis[4-hydroxy-2-naphthalenesulfonic acid].
RR acid	3-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid.
S Acid	4-Amino-5-hydroxy-1-naphthalenesulfonic acid.
Schaffer's acid	6-Hydroxy-2-naphthalenesulfonic acid.
Silver salt	9,10-Dihydro-9,10-dioxo-2-anthracenesulfonic acid and salt.
Solvent Yellow 1	p-Phenylazoaniline and hydrochloride.
Solvent Yellow 3	4-(o-Tolylazo)-o-toluidine.
SS Acid (Chicago acid)	4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid.
Sulfanilic acid	p-Aminobenzenesulfonic acid.
o-Sulfobenzaldehyde	o-Formylbenzenesulfonic acid.

TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES--CONTINUED

COMMON NAME	STANDARD (CHEMICAL ABSTRACTS) NAME
Tetralin	1,2,3,4-Tetrahydronaphthalene.
Thioindoxyl	3(2H)-Thianaphthenone.
Thiosalicylic acid	o-Mercaptobenzoic acid.
Tobias Acid	2-Amino-1-naphthalenesulfonic acid.
TODI	Bitolylene diisocyanate.
o-Tolidine	3,3'-Dimethylbenzidine.
α-Toluic acid	Phenylacetic acid.
α-Tolunitrile	Phenylacetonitrile.
4-m-Tolylenediamine	Toluene-2,4-diamine.
Trimellitic anhydride	1,2,4-Benzenetricarboxylic acid, 1,2-anhydride.
Trimethyl base	1,3,3-Trimethyl-2-methyleneindoline.
Trinitrophenol	Picric acid.
Urea J Acid (J Acid Urea)	7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid].
Veratraldehyde	3,4-Dimethoxybenzaldehyde
Veratrole	o-Dimethoxybenzene.
Vinyltoluene	ar-Methylstyrene.
Violet acid (RG Acid)	4-Hydroxy-2,7-naphthalenedisulfonic acid.

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